

Girls of Color with Intellectual and Developmental Disabilities Reinventing Education Through
an Intersectional Photographic Lens

By

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Abstract

Girls of color with intellectual and developmental disabilities (i.e., autism, cerebral palsy, deaf/blindness, intellectual disability, multiple disabilities) in middle school and high school in the United States are underrepresented in educational research (Erevelles & Minear, 2010; Sinclair et al., 2018). While research reveals some of the ways the educational trajectories of youth of color with intellectual and developmental disabilities are negatively impacted academically and socially, intersectional data often does not exist for disabled girls of color. This empirical project sought to expand current understandings of schooling mechanisms for disabled youth of color broadly by considering the unique intersectional (P. H. Collins, 1998; Crenshaw, 1989; Lorde, 1984) schooling trajectories of girls of color with intellectual and developmental disabilities. Grounded in Disability Critical Race Theory (Annamma et al., 2013) and sociocultural theory (Lave & Wenger, 1991; Rogoff, 2003; Vygotsky, 1978), I examined how schooling mechanisms were generated through materializations (e.g., processes that result in school geographies, classroom layouts, learning tools) and discursive practices (e.g., talk, texts, actions) for disabled girls of color from the girls' perspectives. I employed a critical and participatory (Tuck & McKenzie, 2015) multiple case study design while engaging in iterative data collection and analysis (Bhattacharya, 2017). Six girls of color intellectual and developmental disabilities were focal participants and five teachers were secondary participants. Data sources included: student-generated photographs and maps, student interviews and focus groups, teacher interviews, and observations and recordings of learning and teaching in special education and general education classrooms. Findings from across-case narrative and critical discourse analysis demonstrated how exclusionary and inclusionary schooling mechanisms were generated through materializations and discursive practices. Girls of color with intellectual and

developmental disabilities exposed how their access to the broader school geography was surveilled and restrictive and their perspectives were often not considered in classroom layout design. Moreover, learning tools were often withheld and girls had few opportunities to choose the writing tools they liked best or engage meaningful with electronic devices. Critical discourse analysis revealed that despite the prevalence of teacher-led discourse, girls of color with intellectual and developmental disabilities initiated turn sequences with their teachers through talk and actions. While many initiations were taken up, 40% were missed and overall, teachers overlooked opportunities to cultivate deeper knowledge. Disabled girls of color also repositioned (Davies & Harré, 1990) in response to marginalization through self-governed alternatives, choices different from teacher suggestions despite having few choice making opportunities at school. Finally, materializations, discursive practices, and social and spatial practices intermingled to constrain focal participants' access to texts and accessible communication technologies. This study adds to the current literature with an intentional focus on the strengths, gifts, and solutions (Annamma & Morrison, 2018a; hooks, 2000, 2015) of disabled girls of color and their families. Ultimately, the focal participants illuminated the necessity to center girls of color with intellectual and developmental disabilities as valuable partners in pedagogy and scholarship.

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Chapter 1: Background and Theoretical Framing

The experiences and voices of girls of color¹ with intellectual and developmental disabilities² (i.e., autism, cerebral palsy, deaf/blindness, intellectual disability, multiple disabilities) in middle and high school in the United States are underrepresented in education research (Erevelles & Minear, 2010; Sinclair et al., 2018). Existing research exposes some of the ways the educational trajectories of youth with intellectual and developmental disabilities are negatively impacted academically and socially, such as through overrepresentation in special education classrooms (Kleinert et al., 2015; Morningstar & Kurth, 2017) and in harsh disciplinary practices (Sullivan, Norman, & Klingbeil, 2014). This results in a lack of access to grade-level content and standards (Soukup, Wehmeyer, Bashinski, & Bovaird, 2007; Wehmeyer, Lattin, Lapp-Rinker, & Agran, 2003a) and the absence of curricular modifications (Lee, Wehmeyer, Soukup, & Palmer, 2010). Such mechanisms also deny youth of color with intellectual and developmental disabilities (de Valenzuela, Copeland, Qi, & Park, 2006; Scheuermann, Peterson, Ryan, & Billingsley, 2016; Suarez, 2017) and girls of color with intellectual and developmental disabilities in particular (Kurth, Born, & Love, 2016) rich and valuable academic and social experiences at school. This results in youth of color with intellectual and developmental disabilities underrepresented in high Math and Language Arts test scores (Wagner, Newman, Cameto, & Levine, 2006) and postsecondary educational opportunities (Think College, 2015).

¹ I use the term “girls of color” to honor the experiences, expertise, and youthfulness of girls who identify as Asian, Biracial, Black, Brown, Indigenous/Native, Latina/x, and Multiracial.

² I use the term “intellectual and developmental disabilities” because educational scholarship and state and federal data reporting in the United States is divided by disability label or category (IDEA, 2004). Moreover, my aim is to make sure girls with these particular disability labels are distinguishable as a group necessary to focus on for the reader and centered in future scholarship.

At the same time, extant scholarship also exposes some of the ways youth with intellectual and developmental disabilities are afforded access to vital and robust academic and social experiences at school through inclusionary schooling mechanisms, which I expand on in the next paragraph, such as high-quality instruction for all students (McLeskey, Waldron, & Redd, 2014), peer-assisted learning strategies (Thorius & Santamaría Graff, 2018), and ongoing professional learning and growth for school staff (Olson & Ruppert, 2017). Other scholars have discussed how positioning family members as leaders in broad school decisions (E. W. Carter, Swedeen, Walter, & Moss, 2012) and increasing capacity building connections between schools and communities (Kozleski, Yu, Satter, Francis, & Haines, 2015) positively impact educational trajectories for youth with intellectual and developmental disabilities.

Such inclusionary schooling mechanisms may also afford girls of color with intellectual and developmental disabilities meaningful academic and social experiences in school. However, few studies have asked disabled girls of color³ in middle and high school in the U.S. about their school experiences (Cowley, 2013; Petersen, 2009a, 2009b) including how they identify inclusionary and exclusionary schooling mechanisms. Further, an intersectional analytic lens, defined here as a framework for examining power and privilege without erasing enmeshed and often mutually constituted oppressions at macrosociopolitical and microinteractional levels (P. H. Collins, 1998, 2000, 2015; Combahee River Collective, 1986; Crenshaw, 1989, 1993; Lorde, 1984; Truth, 1997), has rarely been used to examine how inclusionary and exclusionary schooling mechanisms interact with or are mediated by intersecting systems of power (e.g.,

³ I use the phrases “girls of color with disabilities” and “disabled girls of color” (or variations of the term: disabled youth, youth with disabilities) interchangeably in this paper to honor, affirm, and validate individuals who favor identity-first language as well as those who prefer person-first language. I recognize with continual consideration the dynamic nature of language and the language-based decisions we make daily.

ableism, racism, sexism; Artiles, 2013; Erevelles, 2002), particularly for girls of color with intellectual and developmental disabilities (Cowley, 2013).

That said, schooling mechanisms are complex, dynamic, and change across space and time (Gutiérrez & Rogoff, 2003; Hemingway & Armstrong, 2012; Naraian, 2011; Slee & Allan, 2001). I define schooling mechanisms as social, political, economic, and material systems and processes (Erevelles, 2011b) which afford or constrain academic and social opportunities to multiply-marginalized youth of color (Anzaldúa, 1990; P. H. Collins, 1998, 2013; hooks, 1989) from the unique intersectional perspectives of girls of color with intellectual and developmental disabilities and their families. Schooling mechanisms impact academic and social experiences for disabled girls of color. Therefore, I center their perspectives in defining inclusionary and exclusionary schooling mechanisms because they know their experiences best (P. H. Collins, 1998, 2013; hooks, 1989). In other words, I situate inclusionary and exclusionary schooling mechanisms in what and how girls of color with intellectual and developmental disabilities share in their experiences about them. For example, schooling mechanisms may afford or constrain quality heritage embracing (Delgado Bernal, 1998) and culturally sustaining (Paris, 2012) educational opportunities to disabled girls of color. Schooling mechanisms may acknowledge or dismiss the strengths, gifts, and differences (Annamma & Morrison, 2018a; Delgado Bernal, 2002; W. E. B. Du Bois, 1924) of disabled girls of color in pedagogy. In addition, schooling mechanisms can embrace or ignore the participation of girls of color with intellectual and developmental disabilities and their families in decisions that most impact their learning trajectories. Moreover, disabled girls of color and their families have ideas about and solutions for the constraints of particular schooling mechanisms.

In certain classrooms, schooling mechanisms can constrain learning opportunities for all students. This happens when historically and culturally inaccurate curricula are used or when youth cannot take an active role in their learning. Moreover, schooling mechanisms interact with political, historical, and sociocultural contexts and a schooling mechanism that affords quality educational opportunities to one student or group of students may constrain those same opportunities from another student or group of students, thus rendering it an exclusionary schooling mechanism (Broderick & Leonardo, 2016; Kurth, Morningstar, & Kozleski, 2014). For example, when only certain middle school students have access to digital learning tools (e.g., SMART Boards, iPads, graphing calculators) and other students do not, then those learning tools and the classrooms they are located in operate as exclusionary schooling mechanisms. Conversely, inclusionary schooling mechanisms provide access for all students. For instance, when a school library has an array of texts to catch each student's interests and all students regularly visit the library, engage with the resources (adapted when needed), and check out books, then the library space and the materials within it operate in inclusionary ways.

Every student's experiences in school are unique and nuanced, and disabled youth have also shared the complexities of schooling mechanisms within the built environment such as mobility (e.g., locker hooks that were too high), visual (e.g., visual strips on stairs, doors that opened into hallways), and auditory (e.g., flashing lights for fire alarms) barriers (Pivik, 2010). Furthermore, how schooling mechanisms made youth feel was sometimes subtle and even messy. For example, girls with disabilities discussed how "inclusive"⁴ school spaces felt safe and welcoming to them, yet their definitions of inclusiveness varied (Shogren et al., 2015). Girls of

⁴ I use quotations to represent the authors' use of the term "inclusive" or a form of the term (e.g., inclusion, included) and the contested nature of the term. The quotes can be used as reading reminders that there are tensions between multiple definitions of inclusion, especially those that are simply spatial rearrangements.

color with learning disabilities explained how they felt included within “inclusive” high school classrooms where their teachers were empathetic and took time to help them (Connor & Cavendish, 2018). Yet, girls in these “inclusive” classrooms also felt excluded by teachers who ignored their questions or refused to embrace their strengths and needs (Connor & Cavendish, 2018). To further complicate, girls with developmental disabilities who use augmentative and accessible communication, technologies that augment accessibility and create multiple points of access for all youth (Foley & Ferri, 2012; Söderström & Ytterhus, 2010), have discussed how they felt “included” in what would traditionally be deemed an exclusionary space like a special education classroom, because they felt unsafe navigating the broader school environment (Teachman, 2016). That said, inclusionary and exclusionary schooling mechanisms do not exist within a binary where teachers are merely “for” or “against” inclusionary mechanisms (Woodcock & Hardy, 2017). Nor are schooling mechanisms only defined by the particular spaces in which one is taught (e.g., special or general education class). As noted in the girls’ stories above, even an imagined inclusionary space can generate exclusionary mechanisms, depending on how the classroom ecology (Annamma & Morrison, 2018a) is organized (Feldman, Carter, Asmus, & Brock, 2015; Ruppard, Allcock, & Gonsier-Gerdin, 2017).

Inclusionary and exclusionary schooling mechanisms are overlapping and in deep relationship with each other. As the girls disclosed above (Connor & Cavendish, 2018; Shogren et al., 2015; Teachman, 2016), they are not discrete but interconnected across past and present as well as through ideology and action. For example, a girl could feel like her Math teacher and her peers hold her as a knower, yet if the Math manipulatives, calculators, and protractors are always out of reach in a locked cabinet, the spatial arrangement is imbued with an exclusionary ideology. Temporally, what is deemed physically inclusionary for one girl five years ago may be

exclusionary for her now as her experiences and the meanings within particular spaces also change. She may no longer feel a space is physically inclusionary because her wants and needs have shifted over time requiring something new from that space and the people within it. Yet these instances do not exist in isolation. Rather, they are relational and dialogically created (Valente, 2015). Moreover, schooling mechanisms are in constant flux interacting with political, historical, and sociocultural contexts (Artiles & Kozleski, 2007).

One way to examine schooling mechanisms is by looking at how they are generated through materializations, the processes that result in school geographies, classroom layouts, and learning tools (Armstrong, 1999; W. E. B. Du Bois, 1989; Kitchin, 1998; Soja, 1980, 2010), and discursive practices (e.g., talk, texts, actions; Foucault, 1972, 1982; Rogers, 2011; Thiel & Jones, 2017). As social places of learning, schools are full of materializations and discursive practices. Girls learn with and from their peers and teachers by engaging in talk with actions, texts, and tools (Rogoff, 2003). Throughout the day, they may move to various classrooms organized with different layouts and use content-specific texts (e.g., novels, Science text books) and tools (e.g., calculator, paint brush). They may go to other spaces via hallways and ramps, including the cafeteria and gymnasium, thus navigating various layouts and geographies. Yet, materializations and discursive practices are not value-free or neutral. Rather, they are complex social and political products. With this aim, this dissertation study focused on the dynamic relationships between schooling mechanisms, materializations, and discursive practices. Specifically, I examined how inclusionary and exclusionary schooling mechanisms were generated through materializations and discursive practices as identified by disabled girls of color.

I begin this chapter by outlining background information for the study focused on assignments, measures, and outputs for girls of color broadly. Drawing from Annamma and

Morrison (2018a), I chose to discuss “assignment, measures, and outputs” as opportunities the education system allocates, rather than pivot to “placement, achievement, and attainment” as indicators of what students earn in an educational system that positions multiply-marginalized students of color as less than (p. 70). Academic and disciplinary assignments reflect where the system places students academically and behaviorally and the affordances and constraints of those placements. Measures describe how students’ educational progress is determined by assorted assessment tools (e.g., curriculum-based, norm-referenced) and the subsequent scores. Lastly, outputs include graduation, postsecondary education, and employment opportunities.

First, I focus on academic and disciplinary assignments, measures, and outputs for girls of color because the experiences girls of color are having in school may reveal gaps in current understandings regarding the experiences girls of color with intellectual and developmental disabilities are having in school. Then, I shift to describing a small body of literature that focuses on disabled girls of color. Due to a dearth of research with girls of color with intellectual and developmental disabilities specifically, at times I must look broadly at the research focused on disabled girls of color whose disability label is not stated or youth of color with intellectual and developmental disabilities when gender is not considered. Then, after this broad overview, I give a focused problem statement and definitions of key terms which drive my research. Finally, I present my theoretical orientations. This organization provides a strong rationale for the study given that my focal population is a small numerical group in the United States education system.

Girls of Color

Girls of color in the United States experience disparities in academic and disciplinary assignment, measures, and outputs. Despite wanting to participate in Science, Technology, and Math classes, attend and graduate from a college or university, and secure valuable employment

girls of color are often not afforded academic and extracurricular opportunities (National Women's Law Center, 2009, 2017). In this section, I first look at academic and disciplinary assignment, which I define below. Then, I shift to academic measures and outputs.

Girls of color in academic assignment. Assignment reflects where the system places students academically and behaviorally, and the related affordances or constraints of those placements. Considering academic assignment, girls of color are underrepresented in Science, gifted and talented, and advanced placement courses (Office for Civil Rights, 2016; United States Commission on Civil Rights). Specifically, Black girls are underrepresented in advanced Math and Science classes in general and this further constrains their opportunities to earn college credit while in high school (National Women's Law Center & NAACP Legal Defense and Education Fund, 2014). While the literature that reports on race and gender is limited, what is reported is disheartening. Girls of color are overrepresented in special education categorical assignment, such as learning disability, emotional disability, and intellectual disability (Oswald, Coutinho, & Best, 2002). Instead of recognizing their native language skills as assets, schools often place Latina girls in remedial programs early on because they speak Spanish (Crosnoe, 2006; National Women's Law Center, 2009). In addition, Latinas assigned to special education classrooms have discussed experiencing disability microaggressions from teachers including low expectations of academic performance and disregard of academic efforts (Dávila, 2015). Special education and remedial class assignments many times constrain girls' access to general education classes across content areas, thus restricting their academic measures and outputs (Crosnoe, 2006; Hart, Cramer, Harry, Klingner, & Sturges, 2010; Wehmeyer & Schwartz, 2001). Moreover, academic assignment interrelates with disciplinary assignment for girls of color.

Girls of color in disciplinary assignment. Simultaneously, disparities in academic assignment interact with unjust disciplinary practices for girls of color. Research shows girls of color are overrepresented in disciplinary incidents (Annamma et al., 2016; Scott, Moses, Finnigan, Trujillo, & Jackson, 2017; National Women’s Law Center, 2017; Office for Civil Rights, 2016) and incarceration (Chesney-Lind & Jones, 2010; Saar, Epstein, Rosenthal, & Vafa, 2015). In fact, a recent federal report verified that nearly all girls of color are overrepresented in disciplinary actions compared to white⁵ girls (United States Government Accountability Office, 2018). In 2016, Black girls accounted for 8% of all enrolled K-12 students but were 13% of students receiving one or more out-of-school suspensions (Office for Civil Rights, 2016). Schools remove girls of color from classrooms for disciplinary incidents primarily due to minor infractions such as defiance, violating dress code, and cursing (Annamma et al., 2016; Blake, Butler, Lewis, & Darensbourg, 2011; Epstein, Blake, & González, 2017; E. W. Morris, 2007; E. W. Morris & Perry, 2017; M. W. Morris, 2012; Wun, 2016b). In fact, girls of color experience harsher and more exclusionary disciplinary practices, such as detention and in- and out-of-school suspension (Annamma et al., 2016; Arcia, 2007; Hannon, Defina, & Bruch, 2013; Losen & Skiba, 2010; Wun, 2018). When girls of color are removed from classrooms, they are not afforded opportunities to learn from teachers or be with peers (Annamma, 2016, 2018b; Murphy, Acosta, & Kennedy-Lewis, 2013). Thus, exclusionary disciplinary practices constrain girls’ access to and participation in learning. Further, inequitable disciplinary practices sustain the increased likelihood of arrest, incarceration, and more severe sentencing for girls of color (Annamma et al., 2016; Crenshaw, Ocen, & Nanda, 2015; Wald & Losen, 2003) within the school-prison nexus (Annamma, 2018b; Lopez & Nuño, 2016; Meiners, 2007, 2011).

⁵ I chose to capitalize Black while not capitalizing white. Please refer to Gotanda’s (1991) 12th footnote for the reasoning behind my stylistic choice.

Specifically, Black girls, Latina girls, and Native girls are overrepresented in youth prisons (Saar et al., 2015). Clearly, inequitable academic and disciplinary practices operate as exclusionary mechanisms leading to damaging outputs for girls of color (Annamma et al., 2016; Crenshaw et al., 2015; Epstein et al., 2017; Lopez & Nuño, 2016; M. W. Morris, 2012, 2016; Murphy et al., 2013; Saar et al., 2015; Wun, 2016a, 2016b, 2018).

Girls of color in academic measures. Measures characterize how student progress is determined by various assessment tools, such as curriculum-based, norm-referenced, and criterion-referenced assessments, and the resulting scores. Girls of color are overrepresented in low test scores and grades. For example, Black girls and Native girls have lower scores on Math and Reading tests when compared to all other groups of girls across grade levels (National Women's Law Center & NAACP Legal Defense and Education Fund, 2014). Black girls also have lower scores on Science and Technology tests high school and are also underrepresented in successful advanced placement exam scores (National Women's Law Center & NAACP Legal Defense and Education Fund, 2014). Measures are an important indicator of school success on their own, but they also impact assignment, including whether or not a girl of color is promoted or retained at the end of the school year or if she can enroll in advanced placement courses and exams. Moreover, measures influence academic outputs, including graduation rates, postsecondary education, and employment opportunities (Crenshaw et al., 2015; National Women's Law Center, 2007; National Women's Law Center & NAACP Legal Defense and Education Fund, 2014; United States Department of Labor, 2014; Urbina & Wright, 2015).

Girls of color in academic outputs. As stated above, outputs include graduation, postsecondary education opportunities, and employment. Examining data on outputs, girls of color are underrepresented in high school graduation (National Women's Law Center, 2007;

National Women's Law Center & NAACP Legal Defense and Education Fund, 2014; Urbina & Wright, 2015). For example, Black girls, Latina girls, and Native girls are the most underrepresented in high school graduation when compared to all other groups of girls (Musu-Gillette et al., 2017). In addition, Black girls and Latina girls are less likely to attend four-year postsecondary educational institutions when compared to their white female counterparts (National Women's Law Center & NAACP Legal Defense and Education Fund, 2014).

Underrepresentation in high school and college graduation often places girls of color on pathways to low-wage employment (Crenshaw et al., 2015). In fact, girls of color experience higher rates of underemployment and unemployment when compared to the outputs of their white female peers (United States Department of Labor, 2014). Specifically, Latina girls experience one of the largest gender wage gaps among all young women (Zessoules, Hendricks, & Madowitz, 2018). Moreover, unemployment and underemployment are complicated by the discrimination and systemic barriers that girls of color who also have immigrant (Hess, Henrici, & Williams, 2011) and/or refugee status (Park, 2016) must navigate. In sum, underrepresentation in academic outputs has real economic, material, and social consequences for girls of color.

The previous sections highlighted the ways girls of color broadly are overrepresented in low test scores and grades and underrepresented in high school graduation, postsecondary education opportunities, and employment through academic and disciplinary assignment that prevents their access to vital academic and social opportunities. These are examples of how assignments, measures, and outputs can function as exclusionary schooling mechanisms. Next, I describe disparities in academic and disciplinary assignment, measures, and outputs for girls of color with intellectual and developmental disabilities. While the field of intellectual and developmental disabilities is ripe with scholarship focused broadly on youth with intellectual and

developmental disabilities, at times it excludes race and/or gender from the discussion (García & Ortiz, 2013; Sinclair et al., 2018). When this is the case, I discuss gender (girls with intellectual and developmental disabilities) and then race (youth of color with intellectual and developmental disabilities). Likewise, there is information about girls with other disability labels and this has significance for my study because their experiences may provide crucial evidence in both what is known as well as what is not recognized for girls of color with intellectual and developmental disabilities. Due to current gaps in United States federal and state reports wherein information does not focus specifically on girls of color with intellectual and developmental disabilities (Sinclair et al., 2018), I also include evidence from international reports when the focus is on girls of color with a wide range of disability labels including autism, cerebral palsy, deaf/blindness, intellectual disability, and multiple disabilities.

Girls (of Color)⁶ with (Intellectual and Developmental) Disabilities

Disabled girls have expressed that they want to take classes with their peers outside of special education academic assignments (Powers et al., 2007). Moreover, girls with disabilities are motivated learners; they want to be in class growing their knowledge base (Blackorby et al., 2005). However, despite their motivation and desires to learn, girls of color with intellectual and developmental disabilities may also experience exclusionary schooling mechanisms and disparities in academic and disciplinary assignment, measures, and outputs. In the next section, I first discuss disparities in academic and disciplinary assignment, including seclusion and

⁶ I use parentheses to illustrate how some scholarship does not report on race, gender, and/or disability or include intersectional identification and the reader cannot determine if the information, including quotes and stories, is from or about a girl of color with intellectual and developmental disabilities. I also use parentheses to animate the dearth of literature focused on girls of color with intellectual and developmental disabilities, and therefore I include information on girls with intellectual and developmental disabilities as well as girls of color with other disability labels or disabled youth broadly.

restraint. Then, I discuss impacts of academic and disciplinary assignment on social opportunities. Finally, I discuss academic measures and outputs.

Girls (of color) with (intellectual and developmental) disabilities in academic assignment. As previously stated, academic assignment reflects where in the school a student is assigned to learn. Assignment to special education classrooms is common for youth with disabilities (Fierros & Conroy, 2002; Kleinert et al., 2015; Morningstar & Kurth, 2017; Skiba et al., 2006). Many times, when youth with disabilities are assigned to special education classrooms, they attend the same class for all or most of the school day segregated or separated from most other students and staff in the school (Harry & Klingner, 2014; Reid & Knight, 2006). In fact, youth of color with learning or emotional disability are more likely than disabled white youth to be assigned to special education classrooms than general education classrooms (Artiles, Kozleski, Trent, Osher, & Ortiz, 2010; Harry & Klingner, 2014; Losen & Orfield, 2002).

Considering data specifically for youth with intellectual and developmental disabilities, recent research shows that they are still overwhelmingly assigned to special education classrooms and even separate schools (Kurth et al., 2014; Morningstar & Kurth, 2017). In fact, youth with intellectual and developmental disabilities who also have complex communication needs and/or use augmentative and accessible communication are even more likely to be placed in special education academic assignments (Kleinert et al., 2015). Moreover, youth with intellectual and developmental disabilities are more likely to be assigned to segregated, self-contained special education classrooms when compared to youth with other disability labels (Morningstar & Kurth, 2017; Morningstar, Kurth, & Johnson, 2017).

Overrepresentation is also a reality for youth of color with intellectual and developmental disabilities as they are likely to be assigned to segregated, self-contained special education

classrooms (Blanchett, Klingner, & Harry, 2009; de Valenzuela et al., 2006; Fierros & Conroy, 2002). These restrictive academic assignments result in fewer opportunities for youth of color with intellectual and developmental disabilities to engage deeply with academic content (Bacon, Rood, & Ferri, 2016; Causton-Theoharis, Theoharis, Orsati, & Cosier, 2011; Soukup et al., 2007). In fact, the pedagogy and curricula in some special education classrooms often overemphasize self-care, such as brushing teeth and buttoning jackets, as well as independent living skills like cooking and cleaning, while leaving academics underemphasized (Test et al., 2009). Moreover, special education classrooms have low rates of academic instruction wherein the teacher is frequently engaged in non-teaching behaviors (e.g., talking to other school staff, working on the computer) and the students are often involved in activities not academically aligned with grade-level standards (e.g., stuffing envelopes, completing puzzles; Kurth et al., 2016). Given what is known more generally about youth with intellectual and developmental disabilities, I posit girls of color with intellectual and developmental disabilities assigned to special education classrooms may not be afforded opportunities to participate in varied academic experiences throughout the school day. However, there is a dearth of research on special education academic assignment and what happens in those assigned classrooms (Causton-Theoharis et al., 2011; Kurth et al., 2016), specifically for girls of color with intellectual and developmental disabilities. Said differently, intersectional data focused on academic assignment is not available for girls of color with intellectual and developmental disabilities. This is concerning because not only does academic assignment lead to academic progress and post-school opportunities, it also impacts social experiences for youth with intellectual and developmental disabilities (Biggs & Carter, 2017; Koller, Pouesard, & Rummens, 2018).

Girls (of color) with (intellectual and developmental) disabilities in disciplinary assignment. The literature on disciplinary assignment also does not consistently report on girls of color with intellectual and developmental disabilities, and often discusses disabled girls of color without specifying disability labels (e.g., Office of Civil Rights, 2014, 2016) or youth of color with intellectual and developmental disabilities without specifying gender (e.g., Krezmien, Leone, & Achilles, 2006; Sullivan et al., 2014). For youth of color with disabilities more generally, Black students with disabilities were the most overrepresented in suspension compared to all other racial groups (Losen & Gillespie, 2012). Disabled girls of color are overrepresented in disciplinary assignment (Office for Civil Rights, 2014, 2016; Sullivan et al., 2014). Black girls with disabilities are suspended at higher rates than white boys with disabilities at the elementary and secondary levels (Losen, Hodson, Ee, & Martinez, 2014; Losen, Hodson, Keith, Morrison, & Belway, 2015). Moreover, very high rates of suspension exist for Black girls and Latina girls with disabilities in some of the largest U.S. districts (Annamma et al., 2016; Losen & Gillespie, 2012). In 2014, the Office for Civil Rights reported more than 1 in 5 girls of color with disabilities received 1 or more out-of-school suspensions, compared to 1 in 20 disabled white girls. More recently, the Office for Civil Rights (2016) reported that Multiracial girls with disabilities were overrepresented in out-of-school suspensions.

In addition, overrepresentation in disciplinary assignment, means that youth with disabilities are often funneled from education to incarceration via the school-prison nexus, “the policies, ideologies, and local practices that move a select group of young people from schools to prisons” (Meiners, 2011, p. 548). Research shows disabled youth of color are overrepresented in juvenile incarceration (Quinn, Rutherford, Leone, Osher, & Poirier, 2005). Importantly, recent research has shown the interrelatedness between special education and youth prisons for youth of

color with disabilities (Annamma, Morrison, & Jackson, 2014) and girls of color with emotional disability (Annamma 2013, 2014, 2016, 2018a, 2018b) in the school-prison nexus. Moreover, the school-prison nexus also impacts youth with intellectual and developmental disabilities (Zhang, Barrett, Katsiyannis, & Yoon, 2001; Development Services Group, Inc., 2017). According to a recent report on juvenile incarceration, youth with intellectual and developmental disabilities are being incarcerated at high rates (The Arc's National Center on Criminal Justice and Disability, 2015), with some studies estimating that 60-75% of youth involved in the school-prison nexus meet the requirements for a disability (Kim, Losen, & Hewitt, 2010). Because there is a lack of screening and intersectional identification (Annamma, 2018b), the number of incarcerated girls of color with intellectual and developmental disabilities is unclear. As a consequence, the actual numbers of incarcerated girls of color with intellectual and developmental disabilities could be much higher than estimated (The Arc's National Center on Criminal Justice and Disability, 2015).

Seclusion and restraint. Youth with intellectual and developmental disabilities experience another form of disciplinary assignment through the use of physical and mechanical restraint as well as seclusion in time-out rooms (Human Rights Watch, 2009; Suarez, 2017). Specifically, youth of color are targets for seclusion and restraint. For example, disabled Black students represent 19% of students with disabilities (unspecified), but 36% of the students who are restrained at school by mechanical restraints or equipment designed to restrict freedom of movement (Office for Civil Rights, 2014). In a recent American Civil Liberties Union court case, a federal judge in Kentucky found a local county school district in violation of the Fourth Amendment when a school police officer handcuffed a nine-year-old Black girl with multiple disabilities twice around her biceps as a punishment for her behavior (American Civil Liberties

Union, 2017; Suarez, 2017). Disproportionate rates of restraint and seclusion can follow youth of color with intellectual and developmental disabilities into adulthood in group home and institutionalized living spaces (Price, David, & Otis, 2004) and incarceration (Davis, 2009; Vallas, 2016). That said, exclusionary schooling mechanisms like disciplinary assignment, including seclusion and restraint, hold real social and material consequences for girls of color with intellectual and developmental disabilities (Human Rights Watch, 2009; Office for Civil Rights, 2014; Price et al., 2004; Suarez, 2017).

Girls (of color) with (intellectual and developmental) disabilities in social opportunities. Academic and disciplinary assignment impact social opportunities within the broader school setting for youth of color with intellectual and developmental disabilities (Biggs & Carter, 2017; Koller et al., 2018). For example, when school districts situate special education classrooms in remote areas of the school, far away from most classrooms and students (Diep & Wolbring, 2013), then youth of color with intellectual and developmental disabilities have fewer opportunities to engage with peers socially. When youth of color with intellectual and developmental disabilities are assigned to special education classrooms, they miss out on social opportunities during classes and transition times in school hallways and public spaces (e.g., cafeteria, gym, playground) because they do not move from one class to another with their peers or eat lunch with the other students as designated by typical school schedules (Kurth et al., 2016; Ward, 2008-2009). Youth of color with intellectual and developmental disabilities might also be out of proximity to their peers in general education classroom assignments, resulting in fewer social opportunities (Feldman et al., 2015; Soukup et al., 2007). Moreover, overrepresentation in disciplinary assignment further limits access to social opportunities for youth (of color) with intellectual and developmental disabilities (Human Rights Watch, 2009; The Arc's National

Center on Criminal Justice and Disability, 2015). Therefore, girls of color with intellectual and developmental disabilities with special education academic assignment may have limited to no opportunity to socially interact with peers at school.

Academic assignment can also impact social opportunity within the special education classroom. For example, youth of color with intellectual and developmental disabilities are sometimes assigned to individual study cubicles for learning, and their opportunities to interact with peers decreases (Causton-Theoharis et al., 2011). Therefore, a community of learners, wherein shifts in participation change over time and youth learn with and from one another (Lave & Wenger, 1991; Wenger, 1998), may not be cultivated in special education classrooms where individualized or separate instruction is common pedagogical practice (Ryndak, Jackson, & White, 2013). In these ways youth (of color) with intellectual and developmental disabilities have fewer supportive communication opportunities, interactions with peers, and friendships or social relationships (Rossetti, 2011), and the same may be true for disabled girls of color.

Girls (of color) with (intellectual and developmental) disabilities in academic measures. For youth with intellectual and developmental disabilities, academic measures based on various assessment tools can mean taking alternative assessments. The National Longitudinal Transition Study-2 (NTLS-2) was implemented during the 2000-2001 school year to assess youth in 7th grade and above who were receiving special education services and supports. Since data collection, research has shown youth with disabilities are underrepresented in what is deemed success on academic measures, such as test scores and grades (Blackorby et al., 2005; Wagner et al., 2006). Girls with disabilities have lower test scores in Mathematics calculation than boys with disabilities and are further from grade level in Mathematics (Blackorby et al.,

2005). Black youth with disabilities are further from grade level in Mathematics than white students with disabilities (Blackorby et al., 2005).

The NTLS-2 data shows youth with intellectual and developmental disabilities have some of the lowest scores in Mathematics and Literacy (Blackorby et al., 2005). According to NTLS-2 data, girls (of color) with intellectual and developmental disabilities (race not specified) were underrepresented on Mathematics abilities and content knowledge tests when compared to boys with intellectual and developmental disabilities (Wagner et al., 2006). Youth of color with intellectual and developmental disabilities are underrepresented in Literacy and Mathematics content knowledge test scores when compared to their white peers with intellectual and developmental disabilities (Wagner et al., 2006). Given the current research, it is likely that academic assignment and measures may also impact academic outputs for girls of color with intellectual and developmental disabilities. However, the NTLS-2 data does not report specifically on girls of color with intellectual and developmental disabilities.

Girls (of color) with (intellectual and developmental) disabilities in academic outputs. Academic outputs consider postsecondary experiences related to college and employment. Regarding outputs, youth with intellectual and developmental disabilities are underrepresented in postsecondary educational opportunities (Baer et al., 2003; Bouck, 2012). In fact, youth with intellectual and developmental disabilities are underrepresented in overall college enrollment (Newman et al., 2011). This underrepresentation in college enrollment for youth with intellectual and developmental disabilities is irrespective of institution type (e.g., 2- or 4-year institution, community college, vocational school; Newman et al., 2011). When examining college enrollment specific to Transition and Postsecondary Programs for Students with Intellectual Disability, girls with intellectual disability were less likely to be enrolled in

college than boys with intellectual disability (Think College, 2015). Moreover, Think College (2015) reported that youth of color with intellectual disability are underrepresented in the general college population when compared to their white peers. Intersectional data around rates of college attendance and completion is not available for girls of color with intellectual and developmental disabilities.

Considering employment, research shows youth with intellectual and developmental disabilities are underrepresented in early work experiences as high school students (E. W. Carter, Austin, & Trainor, 2011; J. L. Taylor & Seltzer, 2011). In fact, girls with intellectual and developmental disabilities have cited having too few career options and an absence of disability awareness during career planning as barriers to transitioning to postsecondary experiences (Hogansen, Powers, Geenen, Gil-Kashiwabara, & Powers, 2008; Lindstrom, Harwick, Poppen, & Doren, 2012). Moreover, youth with intellectual and developmental disabilities are underrepresented in most types of employment, except for food preparation as well as service or production-related occupations (Newman et al., 2011). However, intersectional data focused on employment is not available for girls of color with intellectual and developmental disabilities. Underrepresentation in academics and overrepresentation in discipline results in work experiences wherein young people with intellectual and developmental disabilities are relegated to segregated day programs, sheltered workshops, or facility-based employment (Hasnain & Balcazar, 2009). In sheltered workshops, youth and adults with intellectual and developmental disabilities generally earn less than minimum wage (e.g., \$1.57 per hour, piece rate; Yell, Katsiyannis, & Prince, 2017). Furthermore, labor in sheltered workshops often consists of repetitive and menial tasks (e.g., tying ribbons on bags, stacking cans) which is problematic because isolating work is not a pathway to equity or participation across all sectors of adult

living. Rather, it is isolating and marginalizing and often leaves disabled employees vulnerable to abuse and neglect (National Disability Rights Network, 2011).

To review, youth of color with intellectual and developmental disabilities are overrepresented in segregated, self-contained special education classrooms (Blanchett, et al., 2009; de Valenzuela et al., 2006), underrepresented in academic measures such as high test scores in Literacy and Mathematics (Wagner et al., 2006), and underrepresented in postsecondary educational opportunities (Think College, 2015). Girls with intellectual and developmental disabilities are also underrepresented in academic measures (e.g., Math tests; Wagner et al., 2006) and are underrepresented in postsecondary college enrollment (Think College, 2005). While the literature does not consistently report on race and disability labels, girls of color with disabilities are overrepresented in disciplinary assignment (Office for Civil Rights, 2014, 2016; Sullivan et al., 2014). Moreover, youth with intellectual and developmental disabilities are being incarcerated at high rates (The Arc's National Center on Criminal Justice and Disability, 2015) and susceptible to mechanical and physical restraint (Human Rights Watch, 2009; Suarez, 2017). Given what is known about girls with intellectual and developmental disabilities and youth of color with intellectual and developmental disabilities, educators, scholars, and policy makers can extrapolate that disabled girls of color are overrepresented in segregated, self-contained special education classrooms, underrepresented in academic measures, and underrepresented in academic outputs. However, there is no unmistakable evidence for this extrapolation and as such, much of the story remains unclear. A more complete storyline is necessary as inequitable academic assignment and measures lead to damaging outputs for girls of color with disabilities (Annamma, 2018b; Ferri & Connor, 2010), particularly girls of color with intellectual and developmental disabilities (Cowley, 2013; Erevelles & Minear, 2010; Gill &

Erevelles, 2017; Petersen, 2009a, 2009b). In other words, the consequences of these assignments, measures, and outputs matter for girls of color with intellectual and developmental disabilities.

Next, I present the social, political, economic, and material consequences as the problem.

Statement of the Problem: Social, Political, Economic, and Material Outcomes

The consequences of exclusionary schooling mechanisms are animated through employment, housing, relationships, and health care for disabled girls into adulthood. Women (of color) with disabilities (disability and race not specified) in the United States are underrepresented in employment with an unemployment rate of 32% and earn 60 cents to every dollar earned by men without disabilities (DeNavas-Walt, Proctor, & Smith, 2012).

Underrepresentation in employment and low wages force women with disabilities to live in poverty more often than their disabled male counterparts (National Women's Law Center, 2016).

In addition, women with physical disabilities have reported experiencing discriminations in the workplace (Randolph, 2005). Inequitable earnings are even more pronounced for women with intellectual and developmental disabilities. Adults (of color) with intellectual and developmental disabilities (race not specified) may earn \$1.57 an hour (Yell et al., 2017). Furthermore, women of color with developmental disabilities in the United States are underrepresented in community-based employment settings (Hasnain & Balcazar, 2009).

For girls of color with intellectual and developmental disabilities, housing is another complex reality. Disabled girls of color may live with their family or extended family. They may also live in a foster care home, community-based setting, or institutional setting. As they get older, these living options remain the same plus one more – their own home. Yet, for most adults with intellectual and developmental disabilities, the most likely arrangements are living with their family or in a community-based setting, like a group home (Bradley, 2015). According to

The Arc's statement on housing, what is most important is that the individual has choices in the community and is not forced to live in an institution (The Arc, 2012). However, it is also important to point out that women with disabilities experience high rates of interpersonal violence in community-based living arrangements (R. B. Hughes, Lund, Gabrielli, Powers, & Curry, 2011). To further complicate matters, we must consider the material reality that women with disabilities are overrepresented at or under the poverty line in the United States (American Association of University Women, 2009). This means housing choices are minimal with governmental policy and funding mechanisms perpetuating marginalization (National Core Indicators, 2015; The Arc, 2012) whereby disabled girls of color may be funneled from exclusionary classrooms as youth to exclusionary living arrangements in adulthood.

Exclusionary mechanisms may also negatively impact the friendships and intimate relationships disabled girls cultivate and maintain into adulthood (Fulford & Cobigo, 2018), particularly for women of color with intellectual and developmental disabilities. Women (of color) with intellectual and developmental disabilities experience high rates of sexual violence (race not reported; The Arc, 2011). According to the U.S. Department of Justice (2017), the rate of rape and sexual assault for people with intellectual disabilities (gender not reported) is 12 times the rate against people without disabilities. Bernert and Ogletree (2013) recently found that many women (of color) with intellectual and developmental disabilities (race not reported) had negative perceptions of sex. Negative perceptions of sex due to limited social opportunities, partner selection, and sexual expression result in fewer experiences with intimacy and intimate relationships (Bernert, 2011). That said, women (of color) with intellectual and developmental disabilities also experience barriers to asserting their sexual orientation or gender identity or fluidity at school, work, and home (United Nations, 2017; UNFPA, 2018). In response, women

(of color) with intellectual and developmental disabilities have described the importance of removing systemic barriers, expanding access to information and sexual health services, and developing opportunities for sexual expression (Friedman, Arnold, Owen, & Sandman, 2014).

Relationship experiences overlap with access to reproductive rights and health care. Although women (of color) with intellectual and developmental disabilities have and want intimate relationships, their access to information and care pertaining to sexual and reproductive rights is limited (Frohmader & Ortoleva, 2014). For example, women (of color) with intellectual and developmental disabilities are less likely to be asked about contraceptive use when visiting general practitioners and are more likely to experience involuntary or forced sterilization (World Health Organization & World Bank, 2011). They are also less likely to receive recommended breast cancer (Wilkinson & Cerreto, 2007) and cervical cancer (Parish, Swaine, Luken, Rose, & Dababnah, 2012) screenings for women later in adulthood. Moreover, women (of color) with intellectual and developmental disabilities are often denied maternity and parental rights (Frohmader & Ortoleva, 2014). In sum, women (of color) with intellectual and developmental disabilities experience limited reproductive rights and discriminatory health care practices.

To wit, women (of color) with intellectual and developmental disabilities earn less than their male counterparts with disabilities or female peers without disabilities globally (Leonard Cheshire Disability, 2014). Moreover, women (of color) with intellectual and developmental disabilities are more likely to experience intimidation and dangerous circumstances in public spaces (Meekosha, 2004). That said, women (of color) with intellectual and developmental disabilities face unsafe circumstances at the workplace, in housing, relationships, and health care, and in their broader communities. Thus, the intersecting oppressions that negatively impact disabled women, including women of color with intellectual and developmental disabilities, in

the abovementioned ways also influence the larger fabric of the community as women with intellectual and developmental disabilities are mothers, daughters, sisters, partners, community members, and laborers (Erevelles, 2011b). However, knowing the outcomes is not the same as knowing the processes that animate the statistics, or how the outcomes occur (Annamma, Handy, Miller, & Jackson, accepted). Rather we must work to excavate the mechanisms that produce inequities for girls of color with intellectual and developmental disabilities.

Equitable opportunities and outcomes for girls of color with intellectual and developmental disabilities cannot be realized without examining the macrosociopolitical processes (e.g., ableism, racism, white supremacy⁷) as well as the microinteractional processes (e.g., classroom interactions, participation structures, learning tools) that produce exclusionary schooling mechanisms from the girls' perspectives (Erevelles, 2011b; Erevelles & Nguyen, 2016). In other words, the goal of nothing about us, without us (Charlton, 1998; UN Women, 2012) cannot be achieved without upholding the experiences and knowledge of disabled girls of color. Yet, few authors in the United States have examined the lived experiences of girls of color with disabilities through an intersectional lens while doing so from the girls' perspectives (Annamma, 2018b; Cowley, 2013; Ferri & Connor, 2010; Petersen, 2009b). Furthermore, there is a dearth of literature that examines how macrosociopolitical and microinteractional processes (P. H. Collins, 1998, 2000; Crenshaw, 1989, 1993) are enacted in schools through materializations and discursive practices. Centering the perspectives of girls of color with

⁷ I define ableism as a system and structure that produces oppressive ideologies, practices, and material realities and centers "ability," "able-bodied," "neurotypical," and "abled" as normative. Here, certain bodies, minds, and behaviors have a greater risk than others of being labeled disabled (Erevelles, 2000, 2011b) or becoming debilitated (Puar, 2017). I define racism as a network of ideologies, practices, and structures based on the belief of superiority of one race over all others used to legitimate the denial and destruction of a people's history, humanity, and right to freedom (Bonilla-Silva, 2018; Karenga, 2002; Lorde, 1984). I define white supremacy as a racist ideology consisting of systems, processes, and interrelated logics that establish and maintain white racial domination, anti-Blackness, and afford certain privileges and advantages to those who can pass as white (Leonardo, 2002, 2004; Mills, 2007).

intellectual and developmental disabilities amplifies the necessity to conduct this project (Annamma, Ferri, & Connor, 2018). Stated differently, an intersectional interrogation affords a deep, nuanced examination of how inclusionary or exclusionary schooling mechanisms interact with and through macrosociopolitical and microinteractional processes. But also, and perhaps more importantly, an intersectional framework exposes the transformative possibilities when youth respond to marginalization by repositioning themselves as holders and generators of knowledge (Delgado Bernal, 2002; Davies & Harré, 1990), especially disabled girls of color.

Purpose Statement

Few scholars utilize an intersectional lens to examine how schooling mechanisms afford or constrain educational opportunities (Annamma, 2014, 2016, 2017, 2018a, 2018b; Artiles, 2013; Erevelles, 2011b; E. W. Morris & Perry, 2017), particularly for girls of color with intellectual and developmental disabilities in middle and high school (Cowley, 2013; Petersen, 2009a, 2009b). In other words, while disparities in academic and disciplinary assignment, measures, and outputs may also exist for girls of color with intellectual and developmental disabilities, the literature focuses broadly on disabled youth or youth of color with disabilities with race, disability, gender, and language as separate categories of identity. Moreover, participant demographics (e.g., disability, gender, race, communication preference) are often missing or incomplete, further complicating the absence of disabled girls of color from the literature (García & Ortiz, 2013; Sinclair et al., 2018). In other words, most scholarship does not consider the unique intersectional schooling experiences of disabled girls of color, it instead reports on youth of color with intellectual and developmental disabilities broadly or focuses only on Black students and/or youth with learning disabilities (Waitoller, Artiles, & Cheney, 2010).

Thus, the stories and experiences of girls of color with intellectual and developmental disabilities in schools remain largely untold (Cowley, 2013; Petersen, 2009a, 2009b).

From a critical educational research perspective, more scholarship is needed to understand how sexism and racism interact with ableism to exclude or include disabled girls of color in schools (Erevelles & Minear, 2010; Yuval-Davis, 2006). The absence of literature essentially erases the experiences of these girls in schools. Such an inadequate scope creates the opportunity for disabled girls of color to be impacted by institutional (a) erasure that upholds ableism, racism, and sexism in schools (Gill & Erevelles, 2017); (b) essentialization that ignores how certain students are benefiting from inequitable school structures (Annamma & Morrison, 2018a) while the girls are not; and (c) unawareness that overlooks how intersectional oppressions and systems of power work together to reproduce inequities (Crenshaw, 1993) for these girls. Consequently, this study sought to understand how inclusionary and exclusionary schooling mechanisms were generated through materializations (e.g., processes that result in school geographies, classroom layouts, learning tools) and discursive practices (e.g., talk, texts, actions) for girls of color with intellectual and developmental disabilities, and do so from the girls' perspectives. Two empirical questions guided this inquiry:

1. How are inclusionary and exclusionary schooling mechanisms generated through materializations for girls of color with intellectual and developmental disabilities?
2. How are inclusionary and exclusionary schooling mechanisms generated through discursive practices for girls of color with intellectual and developmental disabilities?

Key Terms

Next, I provide definitions of key terms used in this study listed in alphabetical order. The terms and resulting definitions are situated within an intellectual lineage which continually

informed and supported this empirical project. Moreover, the terms and definitions are part of my conceptual and theoretical framing.

- *ableism*: A system and structure that produces oppressive ideologies, practices, and material realities and centers “ability,” “able-bodied,” “neurotypical,” and “abled” as normative. Here, certain bodies, minds, and behaviors have a greater risk than others of being labeled disabled (Erevelles, 2000, 2011b) or becoming debilitated (Puar, 2017). Conversely, other bodies, minds, and behaviors are often enabled (Broderick & Leonardo, 2016).
- *disability*: A dynamic social, political, and cultural construction of identity with material realities based on subjective, hegemonic, and normative notions of competence or ability (Connor, Gabel, Gallagher, & Morton, 2008; Erevelles, 2000, 2011b; A. Taylor, 2018).
- *debilitated*: A process wherein neoliberalism and political circumstances, including deficit-laden perspectives, environmental access, war, slavery, settler colonialism, and imbalanced economic power impose uneven social and material realities onto bodies and minds (Boxall, 2018; Erevelles, 2011b; Kennedy, 2015; Puar, 2017; Song, 2016).
- *discursive practices*: A representation of how individuals and groups engage in meaning- and sense-making of people, places, things, and events (Rogers, 2011). Language practices, written texts, ideologies, and actions that are mutually constituted and dialectical, existing within particular social contexts while also influencing said social contexts in which they are produced (Foucault, 1972, 1982; Thiel & Jones, 2017).
- *enabled*: A process wherein social, political, cultural, and economic circumstances allow access or opportunity to social and material realities, including learning, sharing one’s

own knowledge, membership, and relationships (Broderick & Leonardo, 2016; Gill & Erevelles, 2017).

- *girl*: A young person who identifies as a girl, adolescent, or young woman. I use the term girl in this paper to honor the youthfulness, strength, and experiences of girls of color in middle and high school (Kearney, 2009). I also use this term to encourage my audience to avoid what Epstein and colleagues (2017) have named “adultification” wherein Black girls, specifically, are deemed less feminine and innocent than other girls resulting in harsh treatment and exclusionary punishment at school. At the same time, I am aware that the term “girl” can be infantilizing to a young woman with disabilities, as young women with intellectual and developmental disabilities in particular have often not been considered adults (Cowley, 2013; Wehmeyer, 2013).
- *intersectionality*: An analytical, methodological, and theoretical framework for examining power and privilege without erasing enmeshed and often mutually constituted oppressions at macrosociopolitical and microinteractional levels (P. H. Collins, 1998, 2000, 2015; Combahee River Collective, 1986; Crenshaw, 1989, 1993; Lorde, 1984; Truth, 1997).
- *materializations*: Uses of space that include school geographies, classroom layouts, and learning tools (e.g., pencil, protractor, computer) that represent certain ideologies and practices (Armstrong, 1999; W. E. B. Du Bois, 1989; Kitchin, 1998; Soja, 1980, 2010). Materializations do not exist in isolation but rather, influence and are influenced by broader histories, contexts, and spatial realities in which a student or group(s) of students spend time within a school.

- *race*: As a product of social thought and social relations, race and races are subjective, superfluous, and dynamic (Delgado & Stefancic, 2001). In the United States, race is a historical, political, and social construction filled with meaning created to maintain oppositional and hierarchical categories wherein whiteness is dominant and superior, and Blackness is subordinate and inferior (Crenshaw, 1995). Race is many times intertwined with and constituted of intelligence, as superiority (whiteness) or inferiority (all other bodies; Leonardo & Broderick, 2011).
- *racism*: A network of ideologies, practices, and structures based on the belief of superiority of whiteness over all other races used to legitimate the denial and destruction of a people's history, humanity, and right to freedom (Bonilla-Silva, 2018; Karenga, 2002; Lorde, 1984).
- *schooling mechanisms*: Fluid and context-dependent systems and processes (Gutiérrez & Rogoff, 2003; Hemingway & Armstrong, 2012; Naraian, 2011; Slee & Allan, 2001) that have social, political, economic, and material consequences (Erevelles, 2011b) which afford or constrain academic and social opportunities to multiply-marginalized youth of color (Anzaldúa, 1990; P. H. Collins, 1998, 2013; hooks, 1989) as identified by girls of color with intellectual and developmental disabilities. Schooling mechanisms are often deemed inclusionary or exclusionary. Notably, what can be exclusionary for one girl can be inclusionary for another dependent on context and content.
- *sociospatial dialectic*: The mutual constitution of spatial and social processes informed and constructed by one another, both of which are political and ideological (Douglass, 1881; W. E. B. Du Bois, 1989; Lefebvre, 1991). Theorists who espouse to a sociospatial

dialectic also consider time and geo-histories but privilege space in uncovering spatial (Harvey, 2009; Soja, 1980, 2010) and racial (Vélez & Solórzano, 2017) injustices.

The strength of the key terms addressed here lie within the critical examination of power and privilege in learning contexts as identified by girls of color with intellectual and developmental disabilities. Furthermore, these key terms link to my theoretical framing which I describe next.

Theoretical Framing

In this study, I drew on two complementary theories: sociocultural theory (Lave & Wenger, 1991; Lewis, Enciso, & Moje, 2007; Rogoff, 2003; Shweder, 1990; Vygotsky, 1978) and Disability Critical Race Theory (DisCrit; Annamma, Connor, & Ferri, 2013) to examine (a) what inclusionary and exclusionary schooling mechanisms disabled girls of color identified in school and (b) how those mechanisms were generated through materializations and discursive practices. Blending sociocultural theory with DisCrit afforded a conceptual framework and methodological approach to examining how particular ideologies and schooling mechanisms worked in tandem within and through materializations and discursive practices. First, I discuss how as a learning theory, sociocultural theory informed this study. Then, I discuss DisCrit, my broader theoretical framework, including the seven tenets of DisCrit. I conclude with affordances of using an intersectional lens and how this blended framing allowed me to use particular analytical tools – materializations and discursive practices.

Sociocultural theory. Sociocultural learning theory examines the connections between varied aspects (e.g., cultural, political, physical) of people's sense-making, interaction, and learning (Lewis et al., 2007). According to sociocultural theorists, learning is not just intrapersonal but rather, it is social and situated within historical, cultural, and institutional processes that shape what, how, and for whom knowledge gets constructed and reproduced

(Lave & Wenger, 1991; Rogoff, 2003; Shweder, 1990; Vygotsky, 1978). In doing so, sociocultural theory reframes learning not as accumulation or transmission of knowledge but as a process of becoming “an active participant in various communities of practice” (Lim & Renshaw, 2001, p. 14). Thus, learning becomes an open-ended process wherein fresh and unique ideas emerge from relationships, social practices, and collective actions as individuals interact with one another and the world around them (Wenger, 1998).

Sociocultural theory also acknowledges that learning is interactional and mediated by material (space, learning tools) and conceptual (discourse, action) artifacts (Rogoff, 2003; Shweder, 1990; Vygotsky, 1978). Teachers may adapt the accessibility of such artifacts or make artifact-related decisions based on the learning objectives (Janney & Snell, 2006). For example, texts may be enlarged, read through a color overlay, or modified for different reading levels to increase a student’s access to the text (Kurth & Keegan, 2014). Concurrently, students may transform such artifacts as they act on their learning (Shweder, 1990). A concrete discussion of some discursive and spatial concepts may aid in understanding how I conceive learning as a social practice. For example, students and teachers make meaning of academic content and associated social experiences by drawing on prior knowledge and talking with team members in small groups, thus employing the discursive practice of talk. For disabled girls of color, talk may be verbalizations, vocalizations, head movement, sign language, speech generated by a voice-output device or a selection made on a low-tech communication board, or eye gaze, to name a few (Teachman, McDonough, Macarthur, & Gibson, 2018). At the same time, students may also access textual resources in books or other reference materials. These textual resources are also taken up in discursive practices. Students’ opportunities for collaborative interactions are materially designed through the classroom layout of grouped desks, tables, wheelchairs, and

chairs. Depending on the learning activity, they may engage in cycles of searching and synthesizing information while connecting it to their prior knowledge. Youth also organize and make meaning of the information they gather. Then, they prioritize and decide what they want to convey about the topic. They may use markers and poster boards, which are types of learning tools, also referred to as materializations. Through these processes, students and teachers co-construct (e.g., actively take up, reject, modify) knowledge via materializations and discursive practices wherein new knowledge is connected over space and time to local contexts and cultural practices through reciprocal cycles of meaning-making (Rogoff, 2003; Shweder, 1990).

That said, the materializations and discursive practices produced and transformed in learning spaces are not neutral. Rather, they carry a substantial portion of classroom, school, and societal heritage including histories, ideologies, and social practices (Lave & Wenger, 1991). Therefore, sociocultural theory also provided an opportunity to examine the interdependence of social practices, materializations, and discursive practices, also known as a sociospatial dialectic. According to Soja (1980, 2010), a sociospatial dialectic is the mutual constitution of spatial and social processes. Within the spatial turn, the places and spaces produced in schools are not empty containers (W. E. B. Du Bois, 1989; Harvey, 2009; Soja, 2010), but instead are socially produced to include and exclude particular youth, especially youth with intellectual and developmental disabilities (Kitchin, 1998). For example, when classrooms are arranged with individual cubicles or study carrels, then youth have fewer opportunities to engage in the social processes of learning with peers (Causton-Theoharis et al., 2011; Ryndak et al., 2014). In contrast, a classroom arranged with tables or desks that are grouped together, affords more opportunities for youth to learn collaboratively as a community of learners (Lave & Wenger, 1991; Wenger, 1998). In other words, social and spatial processes in schools are interdependent and continually inform

one another while also being simultaneously influenced by educational research, policies, and practices (Waitoller & Annamma, 2017). An investigation of a sociospatial dialectic includes obvious, overlooked, and undiscovered social, material, and spatial realities within classroom and school contexts (Annamma, 2018a).

Consequently, sociocultural theory allowed me to attend to the ways in which inclusionary and exclusionary schooling mechanisms were generated through materializations and discursive practices for girls of color with intellectual and developmental disabilities and to do so from the girls' perspectives. For example, sociocultural theory embraces language systems as tools for thinking and mediating thinking (Rogers, 2011; Rogoff, 2003). Moreover, sociocultural theory provides an opportunity to examine a sociospatial dialectic because it acknowledges that learning is interactional and mediated (Gutiérrez, 2008; Vygotsky, 1978) while attending to the complexities of context (P. H. Collins, 1998; Naraian, 2011) – which can be both social and spatial. Sociocultural theorists uphold youth's funds of knowledge (Moll, Amanti, Neff, & Gonzalez, 1992) and meaning-making which reinforced my choice to center disabled girls of color because they are the experts of their lives (P. H. Collins, 1998, 2013; hooks, 1989). Finally, some sociocultural theorists address power, identity, and agency in explicitly critical scholarship (Lewis et al., 2007; Nasir & Hand, 2006).

Disability Critical Race Theory. DisCrit, an intersectional theoretical framework and sibling of Critical Race Theory (Annamma et al., 2013), strengthens sociocultural theory because it adds an explicit discussion on how power is produced and maintained through learning contexts (Esmonde & Booker, 2017). Hence, DisCrit seeks to reveal how the social, interdependent constructions of racism and ableism operate as powerful institutional and societal mechanisms that surveil, segregate, and oppress multiply-marginalized youth on

macrosociopolitical and microinteractional levels (Annamma et al., 2013). Each tenet of DisCrit affords an intersectional examination of the interconnected processes of racism, ableism, and sexism so deeply engrained in our educational structures, particularly for disabled girls of color.

The first tenet of DisCrit upholds racism and ableism as active and naturalized, wherein the two work together to marginalize particular groups of people while simultaneously constructing normalcy (Annamma et al., 2013; Erevelles, 2002; Ferri, 2010). In doing so, DisCrit exposes how the bodies and minds of girls of color with intellectual and developmental disabilities are outside perceptions of what is normal and thus, are positioned as problematic (Erevelles, Kanga, & Middleton, 2006). This critical interrogation of racism and ableism so profoundly entrenched in schooling mechanisms illuminates the role of hegemonic cultural practices in the education of girls of color broadly. For example, school personnel may judge students' abilities (Baglieri, Bejoian, Broderick, Connor, & Valle, 2011) based on racist ideologies and cultural deficit thinking (Ahram, Fergus, & Noguera, 2011). These judgements pathologize difference and position girls of color as less than. Moreover, such schooling mechanisms maintain the dividing line of general and special education (Skrtic, 1995) wherein girls with disabilities have less access to general education classes (Hart et al., 2010; Wehmeyer & Schwartz, 2001). However, DisCrit tenet one also aims to reject the common supposition that people with intellectual and developmental disabilities want to give up their disability to achieve normality (Ladau, 2014; Laura, in Schaffer, 2012). Therefore, I used the first tenet of DisCrit to expose the often-undetected power inequities and oppressive practices that racism and ableism perpetuate collectively in our schools specifically for girls of color with intellectual and developmental disabilities, while concurrently revealing their gifts, strategies for resistance and

survival, and their solutions (P. H. Collins, 2013; Delgado Bernal, 1998) through their own words as they navigated these structures and practices.

DisCrit tenet two underscores multidimensional identities (Annamma et al., 2013; Solórzano & Delgado Bernal, 2001), rather than singular notions of identity such as disability or race or gender, and so on. Moreover, school personnel have used certain identity markers (e.g., race, gender, disability) to position students as deficient and deviant (K. M. Collins, 2003; Winn, 2010). Therefore, DisCrit also troubles the ways in which other, less prominent identity markers may also be used to position children and youth as different, including language use, sexuality, culture, and immigration status. For the purposes of this study, I used the second tenet to focus this study on the experiences of disabled girls of color who may have several additional identity markers that may be used to position them in particular ways, including linguisticism against girls who use augmentative and accessible communication and whose home language is not solely English. I also used this tenet to explore the ways these identities are valued by the girls and their communities (Yosso, 2005), even when devalued by schools and society.

The third tenet of DisCrit emphasizes the social construction of race and disability while rejecting that either are biological factors (Annamma et al., 2013; Mirza, 1998). By recognizing the social constructions of ability, disability, race, and language, DisCrit recognizes the significance these categories may have in people's lives (Crenshaw, 1993). At the same time, DisCrit reveals how these social constructions preserve segregated education, employment, and housing by the powerful for girls with intellectual and developmental disabilities. Furthermore, exclusion across spaces is most often experienced by disabled Black and Brown bodies (de Valenzuela et al., 2006; Fierros & Conroy, 2002; Krezmien et al., 2006; Losen & Gillespie, 2012; Scheuermann et al., 2016; Skiba, Poloni-Staudinger, Gallini, Simmons, & Feggins-Azziz,

2006; Suarez, 2017). That said, DisCrit rejects any assumption that segregation by the powerful—in contrast to self-exclusion or affinity grouping to maintain safety from oppressive systems—is ever necessary. DisCrit further acknowledges that remedying overrepresentation of students of color in special education is not the final resolution, whereby exclusionary schooling mechanisms continue (Annamma et al., 2013). Therefore, I used the third tenet to expose the ways in which schools used the social constructions of gender, race, ability, and disability particularly for girls of color with intellectual and developmental disabilities and the subsequent consequences or affordances of these constructions. Furthermore, how heteropatriarchy and white feminism impact girls of color (Murphy et al., 2013; Wun, 2016a), specifically girls of color with intellectual and developmental disabilities, looks different compared to how it impacts boys of color or white girls with intellectual and developmental disabilities as well as girls of color with other disability labels.

DisCrit tenet four seeks to disrupt the normative center in schools by emphasizing the experiences and voices of multiply-marginalized groups and individuals (Annamma et al., 2013; Matsuda, 1987). Using the fourth tenet of DisCrit, I focus on disabled girls of color, who may also use augmentative and accessible communication, as knowledge holders (Delgado Bernal, 2002). Positioning the focal participants as knowledge generators afforded opportunities to expose educational, societal, and cultural (in)justices and offer solutions from those most impacted. Further, to speak back to the master narrative that diminishes the understandings and experiences of multiply-marginalized youth, I honored the counter-narratives (Delgado, 1993; Delgado Bernal, 2002; Solórzano & Yosso, 2001), or often untold stories from the margins that challenge the stories of those most powerful, of multiply-marginalized girls of color with intellectual and developmental disabilities. In addition, I upheld the girls' distinctions of both

inclusionary and exclusionary schooling mechanisms. I also used DisCrit tenet four in combination with a humanizing research stance (Paris, 2011; Paris & Winn, 2014a), which involved critically thinking about problems and solutions with and alongside (Kinloch & San Pedro, 2014) disabled girls of color. Through a humanizing stance, I positioned girls of color with intellectual and developmental disabilities as legitimate, valuable research partners (Cammarota & Fine, 2008) and not as problems to be segregated, silenced, and punished.

The fifth tenet of DisCrit recognizes the historical, legal, and ideological aspects of race and disability that have been used independently and collectively to deny rights (e.g., citizenship, educational, legal, property) to certain citizens (Annamma et al., 2013; Gotanda, 1995; Harris, 1993). The origin of this denial of rights is a racial hierarchy espoused by white supremacy or white superiority (Bonilla-Silva, 2001). The racial hierarchy was then reinforced by pseudoscience (e.g., craniology, eugenics, phrenology) and standardized assessment practices, such as intelligence tests, clinical diagnostic assessments, and college entrance exams (Croizet, 2012; W. E. B. Du Bois, 1920) to link the espoused racial hierarchy to intellectual and ability hierarchies, further oppressing Black and Brown bodies with intellectual and developmental disabilities. By creating a racial hierarchy coupled with an ability hierarchy, youth of color are held to white ideology and material practices. Meaning, they are racialized and held to white ideology and material practices as the normative center for ability (K. M. Collins, 2016). In these ways, as an intersectional framework, DisCrit troubles white supremacy beyond a solely race-based conceptualization. Using a DisCrit lens, I imagined that racial and ability hierarchies maintained by white supremacy were animated in nuanced and in/visible ways in schools. It was critical to uncover these realities through the voices and experiences of girls of color with intellectual and developmental disabilities, not only for their current educational situation, but

also for girls who will attend their schools in years to come. Moreover, I focused on leveraging the girls' knowledge and expertise of their community's resistance to the historical, legal, and ideological deployment of deficit on their ways of knowing. This positioning provided opportunity to learn from the girls about ways their interpersonal and community knowledge can be part of inclusionary mechanisms.

DisCrit tenet six acknowledges whiteness and ability as property, which affords economic, political, and social rights and benefits to those who are constructed as "white" while withholding benefits from those who cannot claim whiteness (Annamma et al., 2013; Harris, 1990). In addition, whiteness and ability as property also confer benefits of "able" or "smart" to white youth in schools (Leonardo & Broderick, 2011). Stated differently, a label of smartness in school may subsequently afford a label of goodness or vice versa for white youth, while withholding benefits from Black and Brown bodies who are not deemed "smart" or "good" (Broderick & Leonardo, 2016). DisCrit also recognizes that the gains disabled people, people of color, and women have made have been a result of interest convergence of white, middle-class U.S. citizens. In 1980, Bell described how oppressed groups made progress towards equity and justice initiatives largely when their interests converged with white citizens' interests. Interest convergence has been observed in the legal ruling of *Brown vs Board of Education* and the passing of the Americans with Disabilities Act (ADA) of 1990 (Bell, 1980). While examining how property and interest convergence are manifested in school, DisCrit also illuminates how students with different labels are afforded particular learning opportunities while others are not. Therefore, tenet six allowed me to uncover how whiteness and ability as property were reproduced through disability labeling, access to academic content, and opportunities to socialize with peers (Ferri & Connor, 2005; Storey, 2007), for girls of color with intellectual and

developmental disabilities. Simultaneously, tenet six also allowed me to reveal when educators generated inclusionary schooling mechanisms.

The seventh tenet of DisCrit supports expansive approaches to resistance in response to individual, school, and/or societal marginalization while linking academic work to school communities (Annamma et al., 2013; Torre et al., 2008). Using a DisCrit lens, I imagined activism as emancipatory when diverse forms of resistance are accepted (Paris & Winn, 2014b; Pérez Huber, 2009). In schools, wherein power inequities between teachers and students can be ubiquitous, girls of color with disabilities engage in creative and savvy forms of resistance to maintain their individuality, defend their integrity, and respond to interpersonal violence (Annamma et al., 2016). This resistance may be exhibited as repositioning (Davies & Harré, 1990) or refusing to accept academic and social inequities in school. For example, a disabled girl of color may reposition in response to an academic assignment or school-based therapy she does not enjoy by arriving late or asking to leave early. She may reposition in response to a harsh disciplinary assignment by looking to the future instead of focusing on the past. That said, girls' repositioning can also be met with perceptions of deviance and punishment (Annamma, 2014, 2016; Cowley, 2013; Petersen, 2009b). In sum, DisCrit tenet seven acknowledges that how girls of color with intellectual and developmental disabilities reposition when treated unfairly may look, sound, and feel different dependent on multiple factors.

DisCrit tenet seven also supports teacher resistance in response to the ways schools marginalize youth by identifying what happens when school staff honor girls of color with intellectual and developmental disabilities (Annamma et al., 2013). For example, when a teacher recognizes a disabled girl of color in class and honors her as knowledgeable (Delgado Bernal, 2002), then the teacher is resisting hegemonic schooling practices. Moreover, when a teacher

changes their pedagogy in response to a girl's repositioning (Davies & Harré, 1990), then they are engaging in transformative teaching (hooks, 1994). Therefore, DisCrit tenet seven supported revealing when educators altered their teaching for disabled girls of color.

With this understanding, blending sociocultural theory and DisCrit afforded the opportunity to use materializations and discursive practices as analytical tools to reveal schooling mechanisms and intersecting oppressions (e.g., ableism, racism, sexism). This examination is important for illuminating how the systems and processes that are currently operating within schools liberate or oppress girls of color with intellectual and developmental disabilities.

Conclusion

By blending sociocultural and DisCrit theoretical perspectives, I aimed to examine how macrosociopolitical and microinteractional processes interacted to afford or constrain learning and social experiences for disabled girls of color. Specifically, this empirical project centered on how inclusionary and exclusionary schooling mechanisms were generated through the materializations (e.g., processes that result in school geographies, classroom layouts, learning tools) and discursive practices (e.g., talk, texts, actions) girls of color with intellectual and developmental disabilities experienced in school.

Traditional research in special education often ignores youth perspectives (Connor & Cavendish, 2018; Shogren et al., 2015). However, honoring the voices and experiences of girls of color with intellectual and developmental disabilities through an intersectional lens supports research seeking authentically just and equitable education for these girls while exposing systems of oppression (Erevelles & Minear, 2010). Without critical special education research focused on the lived experiences of disabled girls of color in schools, scholars (perhaps unknowingly) silence the human experience and may miss schooling mechanisms (Carbado, Crenshaw, Mays,

& Tomlinson, 2013). In other words, special education scholars can examine mutually constitutive ideological systems of oppression not to divide people into subsections (Erevelles & Minear, 2010; Guidroz & Berger, 2009), but to make visible the experiences of girls of color with intellectual and developmental disabilities.

At the same time, these two theoretical perspectives are not suddenly making girls of color with intellectual and developmental disabilities known. Disabled girls of color were already there. Rather, the structures that are positioning these girls as invisible are made clear through their voices and we must address the negative impacts of the structures (Cooper, 2015). Therefore, my theoretical framing allowed me to recognize how particular power arrangements constricted possibility for disabled girls of color. Simultaneously, this theoretical framing permitted me to reveal how other power arrangements and schooling mechanisms afforded academic and social opportunities to the girls. While some scholars tell a story about separate threads of oppression, there is a “braided story of ideological, material, social, and psychological oppression and resistance that must be told” (Guidroz & Berger, 2009, p. 63). Blending DisCrit with sociocultural theory honors the knowledge and insights of girls of color with intellectual and developmental disabilities who not only experience and live within mechanisms of discrimination and unequal treatment but who also reposition themselves in response to marginalization with “savvy and ingenuity” (Annamma et al., 2016, p. 23) and name inclusionary schooling mechanisms.

Chapter 2: Literature Review

In this dissertation study, I aimed to extend current understandings of how schooling mechanisms are generated through materializations (e.g., processes that result in school geographies, classroom layouts, learning tools) and discursive practices (e.g., talk, texts, actions) for disabled girls of color in middle and high school by learning from the girls and their teachers.

Numerous areas of literature were germane to framing this study. Because of the nature of the study, the review was based on two primary questions with informing sub-questions:

1. What do we know about the lived experiences of girls (of color⁸) with (intellectual and developmental) disabilities in middle and high school?
 - a. How have scholars used intersectional frameworks to examine the lived experiences of girls of color with (intellectual and developmental) disabilities in middle and high school?
 - b. How have scholars used participatory photography to learn about the lived experiences of girls (of color) with (intellectual and developmental) disabilities in middle and high school?
2. What do we know about schooling mechanisms for girls (of color) with intellectual and developmental disabilities in middle and high school?
 - a. How have scholars used materializations as analytical tools to examine schooling mechanisms for girls (of color) with (intellectual and developmental) disabilities in (middle and high) school?

⁸ Like chapter one, I use parentheses to illustrate how some scholarship does not report on race, gender, and/or disability or include intersectional identification and the reader cannot determine if the information, including quotes and stories, is from or about a girl of color with intellectual and developmental disabilities. I also use parentheses to animate the dearth of literature focused on girls of color with intellectual and developmental disabilities, and therefore I include information on girls with intellectual and developmental disabilities as well as girls of color with other disability labels or disabled youth broadly.

- b. How have scholars used discursive practices as analytical tools to examine schooling mechanisms for girls (of color) with (intellectual and developmental disabilities) in (middle and high) school?
- c. How have scholars used materializations and discursive practices together as analytical tools to examine schooling mechanisms for girls (of color) with (intellectual and developmental) disabilities in (middle and high) school?

In this review, I culled from conceptual and empirical literature to learn from prior scholarship and cultivate my own argument for the purpose and design of the study (Boote & Beile, 2005).

The Study of Disability

First, it is important to discuss the predominant models that influence how disability is viewed in the United States because the way in which disability is viewed impacts how the scholar or research team frames the research questions all the way through to the analysis.

Medical model. Since the colonization of the United States, disability has traditionally been viewed from a medical model. I make this distinction because prior to settler colonialism Indigenous peoples did not necessarily ascribe to the medical model nor do they do so today (Kelsey, 2013; Lovern, 2014). The medical model situates disability as a biological condition located inside the person and therefore assumes the person needs remediation and rehabilitation (Crossley, 1999). Moreover, the medical model influences mechanisms that seek to eliminate disability (e.g., institutionalization, forced sterilization; Gill & Erevelles, 2017). In sum, the medical model, despite strong critiques, influences much of our historical and current legal decisions, policy documents, and professional domains for special education (Artiles, 2013).

Social model. The social model of disability regards disability as a social construction (Connor & Ferri, 2005; Thomas, 2004). Scholars who ascribe to the social model “see

disadvantages as flowing from social systems and structures” (Crossley, 1999, p. 653). A person with a disability loses out on or has limited opportunities to take part in aspects of everyday life because of sociospatial, political, economic, and ideological barriers (Yeo & Moore, 2003). Furthermore, these barriers have real social and material consequences for disabled youth (Connor et al., 2008; A. Taylor, 2018). One branch of the social model is the social-ecological model or person-environment fit model. Here, disability is conceptualized as “the lack of fit between what the person can do and what the person wants to do in typical settings” (Kurth, Zagona, Miller, & Wehmeyer, 2018, p. 147) and the focus is on modifying the environment and providing supports to enable youth to be successful in a particular context. With this in mind, much of the scholarship reviewed here has been influenced by the social model of disability.

Cultural model. The cultural model of disability focused on the overrepresentation of youth of color in special education (Artiles, 2013). The cultural perspective and resulting analysis integrate historical and sociocultural influences that the social model leaves out (Artiles et al., 2010). For example, scholars who ascribe to the cultural model of disability may examine how structural inequities impact Black and Brown youth and the resultant material consequences (Artiles, 2013). Concerns about whether or not the social and cultural models interrogate power and uphold multidimensional experiences have some scholars calling for an intersectional analysis (Erevelles & Minear, 2010; Sleeter, 2010). As discussed, an intersectional analysis examines interlocking oppressions at macrosociopolitical and microinteractional levels.

Research Focused on Girls (of Color) with (Intellectual and Developmental) Disabilities

What do we know about the lived experiences of girls (of color) with (intellectual and developmental) disabilities in middle and high school?

Scholars have studied the lived experiences of girls with disabilities in middle and high school from their perspectives through various qualitative methods, including interviews and focus groups supported by document analysis, observations, and visual methods. At times, disabled girls participated in focus groups with family members (Erevelles & Mutua, 2005). Annamma (2013, 2014, 2016) held focus groups with only youth, specifically girls of color with emotional disabilities. At the time of this review, I was not able to find current literature wherein researchers organized focus groups with girls of color with intellectual and developmental disabilities for the purposes of learning about their lived experiences.

Recently, scholars have used qualitative inquiry to learn from girls of color with learning, emotional, and/or physical disabilities as well as other health impairments (Anderson, Wozencroft, & Bedini, 2008; Annamma 2013, 2014, 2016; Cowley, 2013; Ferri & Connor, 2010; Trainor, 2007; E. H. Whitney, 2016). Qualitative scholarship has also focused on the lived experiences of girls (of color) with intellectual and developmental disabilities (Cowley, 2013; Erevelles & Mutua, 2005; Wickenden, 2011a) and women of color with intellectual and developmental disabilities (Goodwin, 2003; Petersen, 2009a, 2009b). When looking specifically at the literature focused on girls with intellectual and developmental disabilities, two studies reported on race (Cowley, 2013; Erevelles & Mutua, 2005). I identified one study that included a girl of color with intellectual and developmental disabilities (Cowley, 2013).

Girls with intellectual and developmental disabilities have participated in other research projects. However, youth with other disabilities as well as boys with intellectual and developmental disabilities were also included (Cuckle & Wilson, 2002; Evans & Meyer, 2001; Hogansen et al., 2008; G. King et al., 2014; Lindstrom et al., 2012; McKeever et al., 2015; Rossetti, 2015; Salmon, 2013; A. P. Turnbull, Blue-Banning, & Pereira, 2000; Wickenden,

2011b; Worth, 2013). Many times, these authors did not report on race or disaggregate the data by race, gender, and/or disability and the reader cannot determine if the quote or story comes from a disabled girl of color. Moreover, while rich in data, the scholarship also took a narrower lens and did not examine lived experiences broadly. For example, scholarship has focused on transitions and planning for adulthood (Hogansen et al., 2008; Lindstrom et al., 2012), accessibility (McKeever et al., 2015), leisure (G. King et al., 2014), and relationships and friendships (Cuckle & Wilson, 2002; Evans & Meyer, 2001; Rossetti, 2015; Salmon, 2013; A. P. Turnbull et al., 2000; Wickenden, 2011b; Worth, 2013). I weave this scholarship into the following discussion due to a lack of literature that focuses broadly on the lived experiences of disabled girls of color in middle and high school. Also, girls (of color) with (intellectual and developmental) disabilities have discussed schooling mechanisms in these studies.

Next, I discuss scholarship which included girls with intellectual and developmental disabilities as participants in the researcher's quest to learn about their lived experiences while staying grounded in the social model of disability (Erevelles & Mutua, 2005; Hogansen et al., 2008; G. King et al., 2014; Lindstrom et al., 2012; Wickenden, 2011a, 2011b). Afterwards, I review existing research informed by social and cultural models of disability and intersectionality and focused on girls of color with intellectual and developmental disabilities. I organized this section of the review in this way because the literature looked at how microinteractional and macrosociopolitical processes constrained access and opportunities for disabled girls of color and how the girls repositioned in response to marginalization.

Social Model of Disability

Research focused on the understandings and experiences of girls with intellectual and developmental disabilities have revolved around personal interests and sense of self as well as hopes and goals for the future, including relationships and careers.

Personal interests and sense of self. Girls with intellectual and developmental disabilities in middle and high school are passionate about a variety of interests, including music, literature, fashion, sports, food, holidays, trips, and a myriad of other personal pursuits as girls are (Erevelles & Mutua, 2005; Hogansen et al., 2008; G. King et al., 2014; Lindstrom et al., 2012; Wickenden, 2011a, 2011b). Girls who use augmentative and accessible communication have discussed strengths and weaknesses of their communication systems regardless if they were low-tech (e.g., communication book, eye gaze board) or high-tech systems (e.g., speech-generating device; Wickenden, 2011b). Girls considered their high-tech communication systems useful because they enabled them to talk to friends and strangers, have an audible voice, and express their needs and feelings. Moreover, high-tech systems allowed them to communicate with others without needing a mediator. At the same time, girls chose to use low-tech systems at home and with friends because these communication partners were most familiar to them and their communication styles and the low-tech systems were quicker (Wickenden, 2011b). In addition, participants have discussed wanting general education academic assignments (McKeever et al., 2015; Worth, 2013), reliable technology (Wickenden, 2011b), and respectful support personnel who treated them in humanizing ways (Wickenden, 2011b; Worth, 2013). When they have not had these needs met, then youth expressed feeling though their autonomy, community, and teenage identity were in jeopardy (G. King et al., 2014; McKeever et al., 2015; Wickenden, 2011b). In conclusion, only a few scholars have revealed the strengths, interests, and needs of girls with intellectual and developmental disabilities from their perspectives.

Friendships and relationships. Girls with intellectual and developmental disabilities are interested in having friends and varied social experiences, including intimate relationships. They have described ways in which they navigated exclusionary mechanisms that impacted their social experiences at school (e.g., labeling, stereotyping; Salmon, 2013; Wickenden, 2011a; Worth, 2013). In response, they have pushed back on normative expectations of friendship in nuanced ways to meet people and make lasting friendships. For example, girls with (intellectual and developmental) disabilities sought out nondisabled peers so that their peers could be the ones to assist instead of adults (Rossetti, 2015; Salmon, 2013; Wickenden, 2011a; Worth, 2013). In these studies, the girls did not see these as helper-helped dyads but rather as reciprocal and meaningful relationships. In other instances, girls also described self-exclusion wherein they chose to only be friends with other disabled peers (Salmon, 2013). These were purposeful choices wherein girls with (intellectual and developmental) disabilities sought spaces (e.g., disability-specific recreation) in which they did not have to navigate stereotypes and other negative interactions from peers and adults. Girls with intellectual and developmental disabilities have also described how they hoped to have more friends, and some have talked about wanting intimate relationships (Cuckle & Wilson, 2002; Erevelles & Mutua, 2005; Wickenden, 2011a). Moreover, they expressed wanting to go out with their friends to malls, movie theatres, and clubs without adult chaperones (Erevelles & Mutua, 2005; Wickenden, 2011b). In conclusion, disabled girls have identified themselves as social beings who want friends and intimate partners. Next, I discuss how they have described their postsecondary dreams and goals.

Transitions and supports for adulthood. Girls with intellectual and developmental disabilities often think about what their future living arrangements will be as well as their postsecondary options after graduation, including colleges and careers. For example, girls with

(intellectual and developmental) disabilities have shared aspirations to graduate from high school and attend university (Hogansen et al., 2008; Lindstrom et al., 2012; Wickenden, 2011b), acquire meaningful employment (Erevelles & Mutua, 2005; Hogansen et al., 2008; Lindstrom et al., 2012; Wickenden, 2011b), and live independently (Wickenden, 2011b) or semi-independently with supports (Erevelles & Mutua, 2005). Girls with (intellectual and developmental) disabilities have cited a lack of career options and planning as well as gendered career training (e.g., day-cares, elementary schools) as exclusionary mechanisms (Erevelles & Mutua, 2005; Hogansen et al., 2008; Lindstrom et al., 2012). For example, Sue Ellen, a girl with intellectual and developmental disabilities, was excited about a future career that incorporated skills associated with laundering clothes, serving food, and stocking shelves in grocery, video, and book stores (Erevelles & Mutua, 2005). Even though her list mirrored the present-day limited options for youth with intellectual and developmental disabilities (e.g., food service, domestic labor), Sue Ellen was excited about gaining employment and took pride in the job skills she was familiar with and excelled at. More importantly, Sue Ellen's job options list reflected what Sue Ellen had access to and had experienced. Sue Ellen's list may have looked different if she had been afforded access to an array of early work experiences in high school (E. W. Carter et al., 2011). That said, the literature documents how girls with intellectual and developmental disabilities are interested in their futures and want to live their dreams.

Schooling mechanisms. Girls with (intellectual and developmental) disabilities have described inclusionary and exclusionary schooling mechanisms. In one study, girls described school personnel who acknowledged their strengths and took time to get to know them (Hogansen et al., 2008). One participant noted how her career goals were influenced by the school psychologist who encouraged her to follow her dreams (Hogansen et al., 2008). Girls with

(intellectual and developmental) disabilities have also cited exclusionary schooling mechanisms, such as when school personnel were not helpful or supportive to them (Hogansen et al., 2008). Participants have described teachers who they felt were not listening to them (Lindstrom et al., 2012). Disabled girls also described times when they did not receive needed services and supports and attributed their gender and disability label to having to figure things out on their own (Lindstrom et al., 2012). Yet, few studies asked disabled girls how materializations impacted schooling mechanisms and academic and social opportunities.

Summary and Implications

The scholarship reviewed here was important to the current study because it embraced girlhood from the perspectives of girls with intellectual and developmental disabilities. The researchers presumed the girls as the true experts of their lives and through this positioning we learned that they are passionate, resourceful, brilliant, dynamic, and thoughtful. Moreover, girls with intellectual and developmental disabilities have specific interests and strengths. In fact, the participants told the research teams what they liked and did not like in their academic and social lives. The more that is known about what girls with intellectual and developmental disabilities need and want the better scholars and educators can co-construct rich and meaningful academic and social experiences with the girls. There is still much left to be uncovered considering the underrepresentation of girls of color with intellectual and developmental disabilities in academic measures and outcomes (Blackorby et al., 2005; Newman et al., 2011; Think College, 2015; Wagner et al., 2006) and special education scholarship (Sinclair et al., 2018). For example, few scholars have asked girls of color with intellectual and developmental disabilities about their schooling experiences (Cowley, 2013; Ferri & Connor, 2010; Petersen, 2009b). Furthermore, few scholars have focused on how ableism, racism, and sexism impact the lived experiences of

disabled girls of color as well as how the girls reposition themselves in response to marginalization (Davies & Harré, 1990) and generate ingenious solutions.

Research Focused on Girls of Color with (Intellectual and Developmental) Disabilities

How have scholars used intersectional frameworks to examine the lived experiences of girls of color with (intellectual and developmental) disabilities in middle and high school?

Social and Cultural Models of Disability

A body of research has emerged that uses an intersectional analytical lens to examine how political, structural, and representational oppressions (e.g., racism, ableism, sexism) impact girls of color with (intellectual and developmental) disabilities. Simultaneously, this research uncovered how disabled girls of color have responded to and resisted layered marginalizing oppressions and cultivated strategies of survival (Annamma, 2013, 2014, 2016; Cowley, 2013; Ferri & Connor, 2010; Goodwin, 2003; Petersen, 2009a, 2009b; E. H. Whitney, 2016). In this section, I chronologically review intersectional scholarship focused on girls of color with intellectual and developmental disabilities while also weaving in research focused on girls of color with learning disabilities and emotional disabilities. I chose to organize the research in this way because I think the experiences girls of color with learning disabilities and emotional disabilities have had in school may provide valuable questions or information to build from, thus giving a starting point for inquiry focused on girls of color with intellectual and developmental disabilities. At the same time, the intellectual lineage of intersectional research also informs future educational scholarship (Annamma et al., 2018).

Intersectionality pre-DisCrit. In 2003, Goodwin used intersectionality as an analytical tool to expose how sexism, racism, heterosexism, and ableism operated in tandem to end the life of Wanda Jean Allen. Wanda Jean was a Black lesbian woman with multiple disabilities who

was accused of murder even though she was defending herself during a violent attack. Wanda Jean was deemed not credible (A. Taylor, 2018) as she asserted her case of self-defense (Goodwin, 2003). Wanda Jean's story illustrated how Black lesbian women with intellectual and developmental disabilities are positioned as deviant as she was accused of a murder she did not commit (Goodwin, 2003). While this positioning can have irreversible consequences, Wanda Jean cultivated strategies of survival and continued to resist ideas that she was "less than" until her death (Goodwin, 2003). For example, she petitioned in self-defense and asked for clemency when she was sentenced to death by lethal injection. She also advocated through prayer that her defense team be forgiven for their lack of knowledge (Goodwin, 2003).

Petersen (2009a, 2009b) used an intersectional framework to examine how the dominant discourses around race, gender, and disability impacted educational opportunities for four Black disabled women, including Shana, a Black woman with multiple disabilities. Shana's narrative revealed how she had limited opportunities to exert personal agency (Petersen, 2009b). For example, she wanted to quit physical therapy but was not allowed to because the physical therapist argued it was not up to Shana to decide what was best for her (Petersen, 2009b). Furthermore, Shana's personal agency was restricted at school and through employment. However, Shana repositioned (Davies & Harré, 1990) in response to marginalization by refusing to internalize messages of "less-smart" or "less-able" (Petersen, 2009).

DisCrit. At the time of this review, five studies had investigated the experiences of girls of color with disabilities using DisCrit (Annamma et al., 2013) as a theoretical and methodological tool to uncover marginalization and resistance within interlocking systems of oppression (Annamma, 2013, 2014, 2016; Cowley, 2013; E. H. Whitney, 2016). Three studies focused on girls' experiences with the school-prison nexus (Annamma, 2013, 2014, 2016), with

Annamma (2016) looking specifically at the social and spatial mechanisms that funneled girls of color with emotional disability into the school-prison nexus. E. H. Whitney (2016) examined how Black girls with learning disabilities used multimodal composition (e.g., poetry, dance) to construct themselves as learners and challenge deficit notions at the intersections of race, gender, and ability. Cowley (2013) was the only study focused on a girl of color with intellectual and developmental disabilities, examining transition and postsecondary opportunities.

This current body of literature showed how DisCrit was a versatile theoretical and methodological tool. For example, DisCrit was coalesced with Du Bois' Gift Theory (W. E. B. Du Bois, 1924; e.g., Annamma, 2013), FemCrit (Wing, 2003; e.g., Annamma, 2013, 2014), and New Literacy Studies (Street, 1984; e.g., E. H. Whitney, 2016). These theoretical amalgamations spoke to DisCrit's flexibility and potential for theoretical expansion. Moreover, the authors were specific in the ways they used the seven tenets of DisCrit with one author employing all tenets (e.g., Annamma, 2013) and others discussing select tenets. Lastly, all five studies paired qualitative inquiry with other methodological tools, such as collaging (Cowley, 2013), cartography (Annamma, 2013, 2014, 2016), and poetry composition (E. H. Whitney, 2016) to put the girls' stories in context. Combining textual and visual methods affords contextual considerations that single methods may miss (Katsiaficas, Futch, Fine, & Selcuk, 2011).

As mentioned, the research most relevant to the current study examined the experiences of four high school girls with disabilities concerning their transitions towards postsecondary opportunities (Cowley, 2013). One participant, Hope, was a girl of color with an intellectual disability and the author used collage making, interviews, observations, and document analysis to explore Hope's lived experiences from her perspectives. DisCrit tenet one (racism and ableism are interdependent; Annamma et al., 2013) and tenet four (privileging the voices of marginalized

youth; Annamma et al., 2013) supported the analysis revealing how varying levels of segregation, overprotection, and safety created boundaries to womanhood for Hope.

For example, Hope experienced exclusionary mechanisms at the group home (e.g., meal times) and at school (e.g., non-academic instruction, special education assignment; Cowley, 2013). In fact, her choice-making opportunities were constrained across her day from academic assignment to leisure activities to access to peers. Moreover, exclusionary school mechanisms resulted in post-school employment in a sheltered workshop when Hope wanted, and thought she was getting, a job working with computers. In conclusion, Cowley (2013) privileged Hope's experiences, revealed oppressions at macrosociopolitical and microinteractional levels, and illuminated Hope's strategies of resistance and survival.

Summary and Implications

The scholarship reviewed here was important to the study because contemporary scholars have exposed how multiple oppressions manipulated access to choices, resources, and life outputs for disabled girls of color. Intersecting oppressions impacted relationships, postsecondary education, employment, housing, and civil rights. Considering their educational trajectories, participants shared how certain schooling mechanisms were exclusionary by limiting girls' academic and social opportunities (Cowley, 2013; Ferri & Connor, 2010; Petersen, 2009b), providing transition planning that was not person-centered (Cowley, 2013), and constraining access to trusting and caring teachers (Annamma, 2013, 2014, 2016). These exclusionary mechanisms produced and reproduced inequities specifically for girls of color with disabilities. This was especially true for Shana and Hope, both girls of color with intellectual and developmental disabilities. In addition, special education labeling operated as an exclusionary

mechanism for many of the participants as it resulted in more frequent surveillance (Annamma, 2013, 2014, 2016, Cowley, 2013; Petersen, 2009a, 2009b).

Second, some of the participants complicated the narrative that disability labeling perpetuated exclusion as some saw it as a mechanism that afforded positive connections with special education teachers and tutors and increased the girls' opportunities for learning (Annamma, 2014; E. H. Whitney, 2016). Other inclusionary schooling mechanisms included participating in writing groups and book clubs, smaller classes, and sports (Annamma, 2014; Cowley, 2013; E. H. Whitney, 2016). These mechanisms were considered inclusionary because the girls enjoyed them and felt confident, creative, and free to be themselves. In addition, they felt it was easier to get help in smaller classes. Yet for Hope, inclusionary schooling mechanisms were limited (e.g., making meal choices, participating in cheerleading; Cowley, 2013).

Third, this scholarship acknowledged the girls' counter-narratives (Delgado, 1993; Delgado Bernal, 2002; Solórzano & Yosso, 2001) as DisCrit tenet seven supports all forms of resistance (Annamma et al., 2013). In this literature, disabled girls of color repositioned (Davies & Harré, 1990) in response to deficit-laden ideologies that constrained their educational opportunities. For Shana, this meant arriving late to physical therapy or refusing to participate (Petersen, 2009b). Girls' counter-narratives also reflected the ways they resisted state acts of violence (Annamma, 2013, 2014, 2016; Goodwin, 2003). Notably, at times, the participants' strategies of survival were met with perceptions of deviance and even punishment (Annamma, 2013, 2014, 2016; Cowley, 2013; Goodwin, 2003; Petersen, 2009b). For example, when Shana refused to wash her hair because the group home protocol was a mismatch with her own personal care and cultural practices, she lost privileges and received detention. As Petersen (2009b) noted, Shana's resistance was not perceived as personal agency but as "child-like or deviant" (para. 49).

Finally, the reviewed scholarship informed my choices in methods. First, all reviewed studies paired qualitative inquiry with other methodological tools. Next, interviewing complimented visual methods by providing an opportunity for participants to discuss their work, including meaning-making of the process and product (Esin, 2017). Simultaneously, visual methods offered disabled girls of color tangible and personal constructs to discuss during the interview. Finally, pairing qualitative and visual methods also reconfigured the researcher-participant power dynamic in that it provided participants with the opportunity to lead the narrative (Leavy, 2009; Pink, 2013; Prosser, 2011; Harper, 2002) and to tell their story in the way they wanted to convey it (Jocson, 2014). Moreover, an approach that combines methods and resituates power leans towards a participatory stance. This is critical when talking with disabled girls of color who may have had disparate experiences or few opportunities to share their stories (Cowley, 2013; Goodwin, 2003; Petersen, 2009b). In sum, the scholarship reviewed here demonstrates the significance of aligning theory with method and using DisCrit as an intersectional lens when researching with disabled girls of color in middle and high school as only one study (Cowley, 2013) did so at the time of this review.

Participatory Photographic Research

How have scholars used participatory photography to learn about the lived experiences of girls (of color) with (intellectual and developmental) disabilities in middle and high school?

Photography is an information-gathering process (Harper, 1998). Photographs are polysemic, or hold multiple meanings, and provide opportunity to mine for rich data (Schwartz, 1989). Because photos show context and behaviors in context, they can be supportive tools when interviewing youth (Clark, 1999). That said, as a visual method, photography has the power to shift the nature of the stimuli by supplementing dialogue and altering power dynamics between

interviewer and interviewee (Lapenta, 2011). Photo-elicitation and photovoice are two visual research methods (Margolis & Pauwels, 2011). Next, I discuss the similarities and differences the two. Then, I review existing research that uses photo-elicitation and/or photovoice with youth with intellectual and developmental disabilities, including disabled girls of color.

Photo-elicitation. Photo-elicitation provides tools for open-ended interviews (Lapenta, 2011). In photo-elicitation, the photographs may be participant-generated, researcher-generated, and/or community-based. Here, the analysis does not come from the content of the photo but how the picture is given meaning by the participant (Pink, 2013). In other words, photographs are used to elicit dialogue. As a visual method with a complex history (Collier & Collier, 1986), photo-elicitation can challenge ideas, provide nuances, activate memories, lead to new perspectives and explanations, and help avoid researcher misinterpretation (Lapenta, 2011). Photo-elicitation led to the conceptualization of photovoice, which I discuss next. While both methods give the participant more power than the traditional interview structure (Harper, 1998), photovoice is different from using photo-elicitation exclusively. Still, both can work in harmony.

Photovoice. Photovoice is a participatory action research methodology that merges participant-generated photography with photo-elicitation (Power, Norman, & Dupré, 2014). At the interface of theory, method, and praxis (Singhal, Harter, Chitnis, & Sharma, 2007), photovoice is grounded in feminist theory, Freirean philosophies of problem-posing education through dialogic pedagogy, and documentary photography (Wang & Burris, 1997). Through photovoice, participants take photographs and use their pictures to (a) record and illustrate the most salient aspects of their lives, (b) foster critical dialogue and knowledge co-construction by discussing their photographs, and (c) reach policy makers with participant and community interests and insights for informed action (Wang, 2006).

Photovoice is comprised of eight steps: identification, invitation, education, documentation, narration, ideation, presentation or exhibition, and confirmation (Latz, 2017). The participants take photographs at the documentation step. They discuss and make meaning or interpret their images during the narration step (Wang, 1999). The level of participant involvement in each step depends on the project and often ebbs and flows through the process. Historically, photovoice has been used to reveal the perspectives and experiences of those most impacted by structural oppressions, racial, social, and environmental injustice, and varied inequities (Latz, 2017). While photovoice is comprised of a set of methods that seek to disrupt traditional participant-researcher power differentials, photovoice is not a critical methodology on its own. Rather, it depends on how the methods are used and what the team, through the research question(s), seeks to elucidate within the participants' lived experiences. Next, I review the extant photovoice and photo-elicitation (focused on participant-produced photography) research with youth with intellectual and developmental disabilities because my project specifically culls from participatory photography methodologies (Latz, 2017).

More recently, scholars have invited disabled youth to use photography as a medium for examining and sharing their concerns, lived experiences, and aspirations to take collective action. Participatory research has been slower to take hold in mainstream scholarship, especially for youth with intellectual and developmental disabilities. Stevenson (2014) cited deficit and ableist perspectives of intellectual disability as barriers to opportunities for participatory research. Despite deficit perspectives, it is critical to include disabled youth in decision-making and policy planning because these processes impact youth daily (Carpenter & McConkey, 2012).

Youth photography and scholarship in the United States. Through photo-elicitation and photovoice, youth (of color) with intellectual and developmental disabilities in middle and high school have shared a range of experiences and concerns with scholars in the United States.

Photo-elicitation. Dyches and colleagues (2004) asked youth with intellectual and developmental disabilities (ages 5-21) to take photographs of what they viewed as important. Although the youth engaged in interviews about their photographs afterwards, the interviews were used so that the “participants could identify items, places, people, and activities that were unknown to the researchers” (Dyches et al., 2004, p. 176). This information from the youth was not used in the analysis. Rather, the authors used content analysis instead of narrative analysis. This study is quite different from the others I review next because the inquiry was not grounded in the youth’s interpretations and meaning-making of their own photos.

Photovoice. First, Obrusnikova and Cavalier (2011) invited youth with autism (ages 8-14) to share their insights on affordances and constraints to participation in physical activity afterschool. The youth cited intrapersonal, interpersonal, institutional, community, and physical facilitators and barriers to physical activity. The most common barrier was their interest in activities that were not considered physical. Active peers and pets were frequently cited facilitators to physical activity (Obrusnikova & Cavalier, 2011).

J. C. Whitney (2006) invited high school youth (of color) with learning disabilities and youth with intellectual disability to share their experiences with school engagement and disengagement. The author used focus groups and post-interview writing activities to support students who had difficulty describing why they had chosen to take particular images. Youth also used writing supports (e.g., spelling and grammar checks, adapted pens). Some participants created picture sequences when it supported their narrative (J. C. Whitney, 2006).

In another study, Cheak-Zamora and colleagues (2016) asked youth (of color) with autism (ages 16 to 22) in Missouri to tell stories of their lived experiences as they related to their disability through photographs and discussions. The youths' narratives focused on their hopes to live independently, employment experiences and goals, and the meaning of adulthood. The youth discussed supports as natural components of community living they knew they would need when moving out (Cheak-Zamora et al., 2016).

International youth photography and scholarship. Photo-elicitation and photovoice have also been used in Vietnam, Canada, India, and Ethiopia.

Photo-elicitation. Teachman (2016) used participant-driven photo-elicitation to interview youth in Canada with developmental disabilities (15-24 years old) who also used augmentative and accessible communication about their lived experiences particularly around 'social inclusion' (p. 60). Sarah, one girl with developmental disabilities, described feeling very "included" throughout school as she discussed a photograph of her and a friend (Teachman, 2016). She also spoke about how she navigated school physically, socially, and emotionally to avoid appearing different from her peers, exposing the complexities of her school experiences.

Photovoice. Ha and Whittaker (2016) used photography to focus on well-being from the perspectives of youth with autism (ages 10-17) in Vietnam. The authors noted how Đào, a girl of color with autism, took 101 photos of her hands. The authors discussed how content analysis, based on researcher interpretation, would not give them enough meaning about each of Đào's photographs. Đào and another girl of color with autism, Minh, taught the authors to spend time with the girls to turn assertions into queries and ask more questions rather than impose their own interpretations or categories on the girls' photographs. Spending time with the youth was viewed as an additional support to ensure participant success (Boggis, 2011; Ha & Whittaker, 2016).

Youth with physical and developmental disabilities (12-21 years old) in Canada described their participation in and access to winter activities through photos (Lindsay et al., 2015). Most of the youth discussed limited accessibility and independence in the winter months because of the snowy and icy conditions. One girl with developmental disabilities struggled to find a way around the isolation that came with the winter season. Another girl discussed how she could not get to the bus stop because her wheelchair got stuck on the snow-filled sidewalks. She responded by asking for help and taking a longer route (Lindsay et al., 2015).

Kembhavi and Wirz (2009) invited youth with physical disabilities and sensory impairments (13-19 years old) to describe “inclusion” in southern India. The youth were asked to take pictures of things they felt happy, sad, angry or frustrated about, things they enjoyed, and what they wanted to change. While the authors did not talk in depth about what the participants’ photos revealed, they discussed considerations of the method. For example, they felt that disposable cameras were not ideal as they limited the highest quality of photos to be taken outside in daylight. The authors also advised that more photos over time would have given the participants additional opportunities to share their experiences (Kembhavi & Wirz, 2009).

Zehle (2015) asked youth in Ethiopia, including three girls, with physical disabilities, deafness, and blindness (ages 18-25) to share their life stories through photography. One support the author discussed were the friends who accompanied youth when they took their photographs in the community. One girl with a vision impairment caught her garden plot on the school grounds on film. She explained that growing and selling the vegetables was critical to continuing her education (Zehle, 2015). Next, I discuss two photovoice projects with disabled girls of color.

Photography by girls of color with intellectual and developmental disabilities. While the studies previously discussed included boys and girls with disabilities, only two focused on disabled girls of color (de Lange et al., 2016; Nguyen, 2016). I review these two studies next.

First, de Lange and colleagues (2016) invited eight girls with intellectual disability and seven girls with physical disabilities (10-25 years old) to share how they were included in school in Vietnam through participatory visual methodologies. The team explored how the power of visual methodologies (photos, drawings, posters) would center the voices of multiply-marginalized youth and cultivate a sustainable dialogue focused on inclusive education, thus persuading policy makers to make changes concerning the educational rights of girls and women with disabilities in Vietnam. The girls held four exhibitions at various locations with invited stakeholders. Through a catalogue, video, and mass media exchange, the participants shared their experiences and promoted their educational rights with tools they created (de Lange et al., 2016).

Nguyen (2016) recruited 21 Vietnamese girls with physical, intellectual, and developmental disabilities (ages 12-21), including two girls who identified as ethnic minorities, to share their lived experiences. The participants used photos, drawings, analysis, and policy posters to construct their experiences of inclusion and exclusion, based on prompts like “feeling included and feeling not included” (Nguyen, 2016, p. 58). During drawing workshops, girls created pictures focused on “me and my community” and “changes in my community” (p. 59). These visual artifacts animated the girls’ hopes and strategies for inclusion, including their firsthand experiences with academic and social exclusion at school and in the community. Prior to exhibition, the participants decided on the display particulars, including recommendations for schools, community members, and policy makers. Through their shared experiences and art-

based community action, the girls retheorized deficit perspectives of disability into narratives of self and community, strength, creativity, and resistance (Nguyen, 2016).

Summary and Implications

The scholarship reviewed here was important to this dissertation for several reasons. First, the extant research illustrated the transformative possibilities of centering the perspectives and experiences of disabled girls of color in scholarship seeking to change structural inequities (de Lange et al., 2016; Nguyen, 2016; Teachman, 2016; J. C. Whitney, 2006). In addition, as Nguyen (2016) asserted, this participatory research process afforded creative opportunities for the girls, including a chance to examine their relationships with friends, family, and school staff. Participants also interrogated how disability had been conceptualized as a marking of difference and deficit. Moreover, girls in these studies chose to represent disability through the constructs of themselves as individuals and as collectives, thus pushing back against traditional stories that have presented disabled girls as a single story (Winn, 2011).

Second, the extant scholarship exemplified the potential for engaging with disabled girls of color about their perspectives and experiences with materializations (e.g., processes that result in school geographies, classroom layouts, learning tools). Recently, scholars have invited students in middle school (Burke, Greene, & McKenna, 2016) and high school (Burke et al., 2016; Davison, Ghali, & Hawe, 2011; Rose, Shdaimah, de Tablan, & Sharpe, 2016) to uncover their space- and place-based concerns through a photography medium. Pearson (2017) asked college students with physical and sensory disabilities about their experiences with sociospatial relationships. Yet, at the time of this review, there were no studies using photography to examine materializations with disabled girls of color in middle and high school.

Additionally, the reviewed research informed my choices in methods (Boote & Beile, 2005). For instance, photo-elicitation and photovoice are adaptable. In addition to the supports and adaptations discussed here (Cheak-Zamora, et al., 2016; Ha & Whittaker, 2016; J. C. Whitney, 2006; Zehle, 2015), other scholars have used supplementary materials and activities. For example, Wilson and colleagues (2017) used storyboarding to support youth as they concretized and narrated causality in their photos. The youth also used freewriting, group discussions, and communication partners as supports through the research process. Also, youth used mapping to brainstorm and identify school assets and issues prior to taking pictures (Wilson et al., 2007). Dyches and colleagues (2004) used a picture planning form with youth, called “Pictures I Want to Take” (p. 175), as the youth thought about what they wanted to photograph. Morgan and colleagues (2002) have written about supporting youth through participatory research processes (e.g., role play scenarios, drawing, acting) that could also be further adapted for middle and high school disabled girls of color.

Finally, the extant scholarship demonstrated the potentials of the exhibition step. Youth shared their findings and concerns with stakeholders during this step (Latz, 2017). Some projects emphasized how participants and researchers engaged collaboratively. For example, youth made decisions in form, structure, message, and meaning (de Lange et al., 2016; Nguyen, 2016; Zehle, 2015). Thus, making the exhibition their own event. For this project, what the exhibition step looked, felt, and sounded like depended on what the girls wanted.

In the next section, I begin with a brief history of education for youth with intellectual and developmental disabilities in the United States. Then, I restate the question that informed the literature review and focus on the extant research that examines schooling mechanisms for girls of color with intellectual and developmental disabilities in middle and high school. Afterwards, I

shift to research that has used discursive practices and materializations as analytical tools for examining schooling mechanisms. When there is a lack of scholarship, I cull from research that examined schooling mechanisms for girls with intellectual and developmental disabilities in middle and high school and at times, for disabled youth in elementary school.

Historical Context

Historically, youth with intellectual and developmental disabilities were not afforded access to education until the passage of Public Law 94-142 or the Education for All Handicapped Children Act in 1975. As federal legislation, Public Law 94-142, now known as Individuals with Disabilities Education Improvement Act (IDEA, 2004), protects the rights of students with disabilities, including students with intellectual and developmental disabilities, to academic and social opportunities in general education classrooms with their nondisabled peers with necessary supplementary aids and services (e.g., curricular modifications, breaks, large print, extended time) for success (H. R. Turnbull, Turnbull, & Cooper, 2018). This includes access to general education academic curricula and extracurricular activities (e.g., school-sponsored clubs and sports; Pence & Dymond, 2015) throughout a youth's educational trajectory to develop critical skills, have meaningful academic and social opportunities, and experience positive academic measures and outcomes (H. R. Turnbull, Stowe, & Huerta, 2007). Youth with intellectual and developmental disabilities have these educational rights at least until they turn 21 years old, as long as they stay within the K-12 institutional context (H. R. Turnbull et al., 2007).

Students with intellectual and developmental disabilities are now more engaged in school and community settings than they were before 1975 (Bouck, 2012; Morningstar, Lombardi, Fowler, & Test, 2015). However, because disability was conceptualized based on the medical model when Public Law 94-142 was enacted, youth with intellectual and developmental

disabilities were still viewed as deficient, deviant, and not normal, even though they were afforded access to public education (Wehmeyer, 2013). Ableist understandings of disability coupled with federal legislation cultivated the exclusionary schooling mechanism of what is now known as the continuum of placements model for youth with intellectual and developmental disabilities (Sauer & Jorgensen, 2016; Wehmeyer, 2013).

The continuum of placements model is a sequence of academic assignment options based on their degree of restrictiveness from the broader school community, from most to least exclusionary (S. J. Taylor, 2004). The continuum of placement was based on a misinterpretation of the least restrictive environment mandate within IDEA (Sauer & Jorgensen, 2016). When considering the continuum of placements model as imposed by the powerful, the most restrictive setting in a public school would be assignment in the self-contained special education classroom all day. Based on the continuum of placements model, the least restrictive setting would be assignment in the general education classroom all day. Where the academic assignment of a disabled girl of color falls on the continuum between these two poles is dependent on that amount of time she spends in the special and/or general education classroom each day as well as how she receives supplementary aids and services and from whom (S. J. Taylor, 2004).

While theoretically, disabled girls of color can move along this continuum throughout their education trajectories, this is most often not the case. As discussed, girls (of color) with intellectual and developmental disabilities persistently receive their education in the most exclusionary school environments – special education classrooms (Morningstar & Kurth, 2017). Because of the enduring Western beliefs that disability is pathology and something wrong with the person that needs to be fixed, it has been difficult to shift ideologies and thus, exclusionary mechanisms like the continuum of placement persists. Yet, this is not how the law was intended

(Rix, Sheehy, Fletcher-Campbell, Crisp, & Harper, 2015; H. R. Turnbull et al., 2018). Disabled youth may need supports to learn (Kurth et al., 2018) and therefore, significant scholarship has been dedicated to examining schooling mechanisms for youth with intellectual and developmental disabilities (Snell & Brown, 2000; Taub, McCord, & Ryndak, 2017).

In this next section, I begin by reviewing the current literature from the field of intellectual and developmental disabilities focused on schooling mechanisms for girls of color with intellectual and developmental disabilities in middle and high school. Within this field of study, most researchers used academic and social measures to determine if a schooling mechanism, often called an intervention, afforded meaningful academic and social experiences to the focal participants. Some scholars asked students how they felt about the intervention, known as social validity. I note when girls of color with intellectual and developmental disabilities were asked about the social validity of an intervention. While there is not space to review all the literature and it is not all relevant, I chose certain concepts as they related to academic and social experiences generated by materializations and discursive practices.

Schooling Mechanisms

What do we know about schooling mechanisms for girls (of color) with intellectual and developmental disabilities in middle and high school?

To review, I defined schooling mechanisms as fluid and context-dependent systems and processes (Gutiérrez & Rogoff, 2003; Hemingway & Armstrong, 2012; Naraian, 2011; Slee & Allan, 2001) that have social, political, economic, and material consequences (Erevelles, 2011b) which afford or constrain academic and social opportunities to multiply-marginalized youth of color (Anzaldúa, 1990; P. H. Collins, 1998, 2013; hooks, 1989) as identified by girls of color

with intellectual and developmental disabilities. Here, I review research on schooling mechanisms for girls of color with intellectual and developmental disabilities.

School Geographies

In schools, learning takes place across and within varied materializations, including the processes that result in school geographies, classroom layouts, and learning tools. School geographies include where youth learn and play, and how these spaces are organized in reference to one another (Theil & Jones, 2017). For example, this includes whether or not there are general and special education classrooms and where they are located in reference to one another as well as where temporarily occupied spaces like libraries, cafeterias, or hallways are situated. Generally, these spaces are separated by walls, doors, or windows. Ideologies about students are materialized in these geographies (S. Jones et al., 2016). Therefore, the geographies in a school shape the peers, knowledge, and experiences youth have access to and the interactions and learning that occur within those spaces (Armstrong, 1999).

Academic assignment. IDEA (2004) mandates that all youth with intellectual and developmental disabilities have access to general education academic curricula in the least restrictive environment (H. R. Turnbull et al., 2007). Assignment in the general education classroom has been connected with opportunities for youth with intellectual and developmental disabilities to practice and develop communication skills (Kleinert et al., 2015). In these spaces, youth have more opportunities to practice skills (Dessemontet & Bless, 2013). In fact, academic assignment in the general education classroom has been identified as a predictor of academic outputs (Jackson, Ryndak, & Wehmeyer, 2008-2009), including meaningful employment, postsecondary education opportunities, and independent living options for youth with intellectual and developmental disabilities (Test et al., 2009).

Youth with intellectual and developmental disabilities have had positive academic measures and outcomes in general education academic assignments (Hudson, Browder, & Wood, 2013; Matzen, Ryndak, & Nakao, 2010). Recent research has shown that girls (of color) with intellectual and developmental disabilities were more engaged in class lessons and activities in the general education academic assignments than special education (Kurth & Mastergeorge, 2012). In addition, when disabled girls were learning in context (e.g., Science experiments in the Science lab, pickle ball in the gymnasium, socializing in the cafeteria; Jackson, Ryndak, & Billingsley, 2000), then learning was more meaningful and engaging. Furthermore, girls (of color) with intellectual and developmental disabilities were more often working on activities associated with state standards with more accommodations and modifications in general education academic assignments (Wehmeyer et al., 2003a).

Classroom Layouts

Classroom layouts include the size of the classroom, furniture arrangement, and access to storage as well as colors, lights, and sounds. Classroom layouts may determine student participation within learning spaces in the classroom, such as when students work with a partner, in a small group, or as the whole class engages in an activity together (Soukup et al., 2007). This materialization has consequences for students (S. Jones et al., 2016). For example, classroom layouts that afford or constrain interactions with peers send messages about how memberships and relationships are valued in the classroom (Janney & Snell, 2006).

Instructional groupings. Research has shown that academic and social measures are positively influenced when youth with intellectual and developmental disabilities and their peers without disability labels had opportunities to learn collaboratively (Copeland & Cosbey, 2008-2009; Morningstar, Shogren, Lee, & Born, 2015). Soukup and colleagues (2007) found girls (of

color) with intellectual and developmental disabilities had greater access to the general education curricula when they were learning in a whole or small group setting than one-on-one with school personnel or on their own in general education classrooms. The authors also reported how learning environments were less distracting for one disabled girl of color when peers were present (Soukup et al., 2007). This finding suggests that the peers' presence altered school staff behaviors in meaningful ways. Moreover, when students were working in small groups, they had the opportunity to support one another and help each other learn.

Learning Tools and Discursive Practices

Learning tools are the materials students use in the classroom, such as Art supplies, writing utensils, manipulatives for Mathematics, Science, and Social Studies, and technology-based tools (e.g., tablets, software, communication devices). Discursive practices are the talk, texts, and actions that occur in a learning space. In school, learning tools and discursive practices represent how students, as individuals and groups, engage in meaning- and sense-making of people, places, things, and events (Rogoff, 2003). When a student is not allowed to use the same learning tools and discursive practices as their peers or teachers or have access to something similar or modified, then messages about who has power and whose knowledge is valued are communicated (Leander, 2002). In other words, messages about learners emerge through learning tools and discursive practices. Learning tools and discursive practices are many times intertwined in schools and it is difficult to separate the two in scholarship that is intervention focused. In the next section, I review literature focused on instructional strategies that afford access to academic and social opportunities (however, not always in general education academic assignments) for girls of color with intellectual and developmental disabilities.

Embedded instruction. Embedded systematic instruction is a discursive practice wherein youth receive instruction rooted naturally within learning activities. Embedded instruction has been found to cultivate academic and non-academic skills (e.g., communication, social-emotional, Jimenez & Kamei, 2015) for youth with intellectual and developmental disabilities. Research has shown that embedded systematic instruction acts as an inclusionary schooling mechanism when it is used to redistribute quality educational opportunities to girls with intellectual and developmental disabilities in Literacy (B. C. Collins, Evans, Creech-Galloway, Karl, & Miller, 2007; Ruppar, Afacan, Yang, & Pickett, 2017) and during class transitions and break times (Riesen, McDonnell, Johnson, Polychronis, & Jameson, 2003).

Two studies focused on embedded instruction included girls of color with intellectual and developmental disabilities as participants (E. W. Carter, Sisco, Melekoglu, Kurkowski, 2007; Jameson, McDonnell, Polychronis, & Riesen, 2008). However, I discuss the findings later in the review as research teams coupled embedded instruction with peer support arrangements in middle and high school classrooms. Embedded instruction is one participation structure wherein a critical examination of discursive practices could reveal when power is afforded to a student.

Content-specific strategies. In addition to embedded instruction, scholars have examined other strategies that support youth with intellectual and developmental disabilities learn general education content. Content-specific strategies generally pair discursive practices and learning tools (e.g., adapted grade-level biographies; Mims, Hudson, & Browder, 2012; self-questioning strategies; L. Wood, Browder, & Flynn, 2015). In particular, culturally-responsive story-based lessons in their home language and English (Spoonier, Rivera, Browder, Baker, & Salas, 2010) and multi-symbol messages during storybook reading (Finke et al., 2017) have supported literacy development in the elementary grades for disabled girls of color.

Disabled girls of color in elementary and middle school have cultivated numeracy skills using Math manipulatives and self-monitoring charts through modified schema-based instruction (Browder et al., 2018). When asked through social validity measures, the participants enjoyed using technology paired with shared stories (Spooner, Kemp-Inman, Ahlgrim-Dezell, Wood, & Davis, 2015) and playing inquiry-based Science activities (Smith, Spooner, Jimenez, & Browder, 2013). In another study, Rachel, a girl of color with autism, enjoyed using Book Builder eTexts on the computer to learn Science content and vocabulary (Knight, Wood, Spooner, Browder, & O'Brien, 2015). In a high school special education classroom, Celia, a girl of color with multiple disabilities, shared that combining visual supports and discussion strategies helped her comprehension (Shurr & Taber-Doughty, 2017).

Accommodations, modifications, and adaptations. Accommodations, modifications, and adaptations are the ways in which teachers prepare and change instruction and learning tools to increase youths' accessibility to, practice with, and progress in academic and social experiences (Janney & Snell, 2006). Teachers generally pair discursive practices and learning tools through accommodations, modifications, and adaptations to achieve these ends. Research shows when the appropriate accommodations, modifications, and adaptations are present, then students are more engaged in learning and thus, have greater degrees of success across academic measures (Fisher & Frey, 2001; Lee et al., 2010; Wehmeyer et al., 2003a).

Common adaptations include changing text present to larger print, using color inlays, or varying the format (Morningstar et al., 2015). These changes focus on how content is taught (Kurth & Keegan, 2014). In addition, a text or graphic may be modified by changing the content (e.g., reading level, difficulty of math problem), therefore changing the focus of what is taught (Janney & Snell, 2004). Other accommodations involve using a graphic or supplementary

learning tool (e.g., calculator, number line) to depict content or support access to the content (Morningstar et al., 2015). In addition, other types of adaptations focus on changing the goal, instruction, or activity that the students engage in (Kurth & Keegan, 2014).

Fisher and Frey (2001) used qualitative methods to examine the accommodations and modifications of two girls with intellectual and developmental disabilities, one was a girl of color in 10th grade, Heather. With her small group, Heather listened to the assigned Langston Hughes poem, *A Dream Deferred*, on tape prior to writing a poem. While the researchers did not ask the girls how they felt about the accommodations and modifications, the use of such tools increased both girls' literacy skills (Fisher & Frey, 2001).

Social Opportunities

Peer support arrangements, peer networks, and peer partner programs are three types of interventions developed to increase access to the general education curriculum for youth with intellectual and developmental disabilities while also fostering social opportunities (E. W. Carter, Sisco, Chung, & Stanton-Chapman, 2010; Garrote, Dessemontet, & Opitz, 2017).

Peer support arrangements. Peer support arrangements are individualized interventions wherein a student without disability labels is paired with and supports the learning of their disabled peer. The extant literature demonstrates that peer support arrangements afforded meaningful academic and social experiences to girls (of color) with intellectual and developmental disabilities (Brock & Huber, 2015; E. W. Carter & Kennedy, 2006; Huber, Carter, Lopano, & Stankiewicz, 2018; Jimenez, Browder, Spooner, & DiBiase, 2012).

Girls of color with intellectual and developmental disabilities have benefited from peer supports as they worked on classroom activities, asked questions, and completed projects in Science and Art classes (Jameson et al., 2008) and Biology classes (E. W. Carter et al., 2007).

However, Amelia, Ella, and Odessa, all girls of color with intellectual and developmental disabilities, were not asked about the social validity of the interventions.

Peer networks. Peer networks are individualized interventions designed to cultivate sociality at a group level and sustain social interactions beyond academic assignment (E. W. Carter, 2018). Peer networks consider the spontaneous and organic social opportunities that take place across the school day (e.g., lunch, passing periods, extracurricular activities). Peer networks have been shown to increase social exchange and friendships for youth with intellectual and developmental disabilities (Hochman, Carter, Bottema-Beutel, Harvey, & Gustafson, 2015). When asked, girls with intellectual and developmental disabilities shared that they enjoyed spending time with their peer networks and wanted to continue hanging out and learning new things (Asmus et al., 2016). At the time of this review, I could not find this literature focused on disabled girls of color.

Peer partner programs. Peer partner programs are group-based interventions (C. Hughes & Carter, 2008) commonly implemented as “reverse mainstreaming” approaches that take place in special education classrooms (E. W. Carter, 2018, p. 58). Students without disabilities and school staff have deemed peer partner programs as effective strategies for increasing social opportunities, such as interactions with peers for girls (of color) with intellectual and developmental disabilities in high school (E. W. Carter & Pesko, 2008; Copeland et al., 2004). Peer partners have cited schooling mechanisms that negatively impacted their peer partners with disabilities, including physical and social segregation, differential treatment, deficit-laden expectations, and inappropriate or insufficient supports (Copeland et al., 2004). Peer partner programs have not been widely adopted and the perspectives of disabled girls of color on these programs are minimal (E. W. Carter, 2018).

Self-Determination

Self-determination as a set of skills adheres to the social-ecological model of disability. Self-determination focuses on choice-making, decision-making, problem-solving, goal-setting and goal-attainment, self-management, and self-advocacy as well as self-awareness and self-knowledge (Shogren, 2013). Research has shown that youth with intellectual and developmental disabilities benefit from becoming more self-determined (Algozzine, Browder, Karvonen, Test, & Wood, 2001; C. Hughes, Cosgiff, Agran, & Washington, 2013; Wehmeyer, Palmer, Shogren, Williams-Diehm, & Soukup, 2010). Research also suggests that youth are more prepared for adulthood when they are self-determined at school (Shogren & Shaw, 2016).

Girls with intellectual and developmental disabilities have benefited from using the Self-Determined Learning Model of Instruction (SDLMI) to set and achieve goals, including arriving to class on time (Wehmeyer, Hughes, Agran, Garner, & Yeager, 2003b), engaging in scientific inquiry (Agran, Calvin, Wehmeyer, & Palmer, 2006), and contributing to class discussions (Agran, Blanchard, Wehmeyer, & Hughes, 2012). Many participants felt that setting a goal helped them reach their objective, with some indicating feeling prideful and happy that their school experiences improved (Agran et al., 2006, 2012; Wehmeyer et al., 2003b). In one study, girls of color with intellectual and developmental disabilities also had positive results attaining goals using the SDLMI (Shogren, Palmer, Wehmeyer, Williams-Diehm, & Little, 2012). Yet, the potential ideological consequences for the self-determination model in terms of emphasis on independence versus interdependence are understudied (Cowley & Bacon, 2013).

Making choices. Choice making is a vital skill and tool of personal expression for youth with intellectual and developmental disabilities (Çetin, & Safak, 2017). Choice making is more than an act of selection, it is an expression of preference (Bambara, 2004). I discuss it briefly

here because youth with intellectual and developmental disabilities have few opportunities to make choices at school even though choosing holds power that can be used to enhance a young person's life (Agran, Storey, & Krupp, 2010). According to recent reviews, choice making was the most commonly taught skill at school (Algozzine et al., 2001; W. M. Wood, Fowler, Uphold, & Test, 2005). Girls with intellectual and developmental disabilities have stated wanting to make choices and have learned how to do so (Singh et al., 2003). However, girls of color with intellectual and developmental disabilities are still underrepresented in the choice-making research (Wehmeyer & Abery, 2013). Furthermore, little is known about how discursive practices afford or constrain choice-making in schools and the ideological consequences of focusing on individual choice versus collective decision-making.

Summary and Implications

The research reviewed here had important implications for the current study. First, the scholarship set the groundwork for examining schooling mechanisms for disabled girls of color. For example, when a focal participant spoke about a peer she learned with in her general education class or a peer that came to the special education classroom, then I could relate her experiences and understandings to what was represented in the literature. In addition, I returned to the literature and asked follow-up questions during the next interview.

Second, most of this scholarship reviewed here did not focus on examining power and intersecting oppressions because it emphasized how youth with intellectual and developmental disabilities accessed, participated in, and made progress in their academic and social experiences. This work has been necessary to demonstrate that students can learn, a belief that was (and many times is still) not believed (Wehmeyer, 2013). In doing so, it gave a microinteractional view to ground myself in when observing the multidimensional realities of schooling. This view was

multidimensional because it considered the political, historical, and sociocultural contexts of schooling mechanisms at the school, classroom, and student level. The field of intellectual and developmental disabilities has provided tools and strategies that can operate as schooling mechanisms. I contend there are more to excavate.

Third, the scholarship here gave language and identifiers (e.g., embedded instruction, accommodations, peer support arrangements) to help connect critical, intersectional examinations to what we know and unknown regarding schooling mechanisms for disabled girls of color. This was helpful when talking about specific power imbalances within particular schooling mechanisms with teachers. This language was also beneficial when discussing how particular mechanisms were inclusionary and/or exclusionary based on the girls' perspectives.

Next, I shift to research that has used materializations and discursive practices (e.g., talk, texts, actions) as analytical tools for examining schooling mechanisms. Sometimes the team reports on gender, race, and disability and other times, they do not. Because there is a lack of scholarship focused on girls of color with intellectual and developmental disabilities, I culled from research that examined schooling mechanisms for girls with intellectual and developmental disabilities in elementary school, youth with intellectual and developmental disabilities in middle and high school, and youth of color with learning disabilities and emotional disabilities or who received services for gifted and talented in elementary, middle, and high school. First, I look at materializations and then discursive practices. Finally, I review literature that examined both.

Materializations as Analytical Tools

How have scholars used materializations as analytical tools to examine schooling mechanisms for girls (of color) with (intellectual and developmental) disabilities in (middle and high) school?

Reconceptualizing the significance of space in the field of geography has had a profound and dynamic impact on the humanities and social sciences (Arias, 2010; Warf & Arias, 2008). The reworking of the concept and substance of space is commonly referred to as the spatial turn (Harvey, 2009; Lefebvre, 1991). The spatial turn was a renewed focus on the impacts of cartography and landscape on people and circularly, people's impact on them (Soja, 2009). This thought and methodological renaissance occurred because of a renewed appreciation that space is a complex social and political product interacting with and influencing the sociocultural and historical realities that shape the human experience (Soja, 2010). I discuss these implications here because they directly informed my conceptualizations of materializations (e.g., processes that result in school geographies, classroom layouts, learning tools).

As discussed in chapter one, a sociospatial dialectic is the mutual constitution of spatial and social processes constructed and informed by one another (Harvey, 2009; Lefebvre, 1991; Soja, 1980, 2010) and space is not something assumed or given. Rather, humans use space to intentionally reproduce political, social, economic, cultural, and environmental geographies (W. E. B. Du Bois, 1989). That said, space also illuminates dominant ideologies, discourses, and power structures in and through education policies, processes, and practices. The way schools reproduce space determines whose body occupies that space and how the space is distributed and used academically and socially (Armstrong, 1999). Thus, spatial analysis can be used to unmask how schools reproduce and disrupt inequities by exploring spaces and the meanings individuals make from their experiences (Morrison, Annamma, & Jackson, 2017).

When examining racism, a critical spatial theoretical lens has supported the re-emergence of Critical Race Spatial Analysis (CRSA; Pacheco & Vélez, 2009; Vélez & Solórzano, 2017) in the United States. I claim "re-emergence" because it was Frederick Douglass (1881) and then Dr.

W. E. B. Du Bois (1989) who reconceptualized the color line animating how space and racism work together to separate Black and white bodies. The color line represents how racial segregation is enacted across spaces. Therefore, the color line was pivotal in framing how Critical Race Theory understands space (Vélez & Solórzano, 2017). CRSA scholars critically interrogate how structural and institutional processes and practices exclude, monitor, and mediate communities and youth of color (Pacheco & Vélez, 2009; Pérez Huber, 2008). Scholars use CRSA to map schools and spaces using geographic information systems (GIS, systems that share, store, analyze, edit, and display maps) coupled with qualitative methods in education research. In doing so, CRSA scholars show how structural and institutional factors impact educational opportunity for youth of color (Vélez & Solórzano, 2017).

Considering ableism, Kitchin (1998) asserted critical spatial analysis reveals how environments are socially produced to exclude people with disabilities. In other words, spaces are organized to keep disabled people “in their place” and to convey when disabled people are “out of place” (Kitchin, 1998, p. 345). Furthermore, Kitchin also claimed that capitalist modes of production interact in conjunction with the social and cultural construction of disability to exclude disabled people. A year later, Armstrong (1999) echoed Kitchin’s assertions about the importance of considering space in disability justice, especially inclusionary schooling mechanisms. According to Armstrong (1999), space and people determined if social inclusion was accessible (open frontiers) or barred (closed boundaries).

Armstrong (2007) demonstrated how a spatial approach could expose how schooling mechanisms “spaced out” youth physically in schools (p. 107). Expanding this claim, Erevelles (2011a) asserted that even if students enjoy spatial “inclusion,” the ideologies in the school curricula or policy construct certain students as deficient, deviant, and dangerous. In fact, school

policies and practices actively and invisibly work to justify and reproduce youths' exclusion (Erevelles, 2011a). Therefore, mechanisms present in ideologies, policies, and discourses may operate through school spaces. Moreover, schooling mechanisms are much more complex than simply physical space (Feldman et al., 2015; Rix et al., 2015; Ruppert et al., 2017), particularly for girls of color with intellectual and developmental disabilities. Next, I discuss examples of how scholars have used critical spatial theories to unearth schooling mechanisms.

Critical School Geographies

More recently, scholars have employed critical spatial theories to examine space, power, and injustice for youth of color (Krueger-Henney, 2015; Rubel, Lim, Hall-Wieckert, & Katz, 2016), LGBTQ youth (Schmidt, 2015), girls of color with emotional disabilities in youth prisons (Annamma, 2018a), and youth experiencing school exclusion (Thomson, 2007) through mapping. In three studies, youth mapped spaces to excavate inequities across community spaces (Rubel et al., 2016) and school spaces (Krueger-Henney, 2015; Schmidt, 2015). Two studies employed youth participatory action research methodologies (Krueger-Henney, 2015; Rubel et al., 2016), and two studies examined the school-prison nexus (Annamma, 2018a; Krueger-Henney, 2015). In one study, students created maps of their education trajectories (Education Journey Maps; Annamma, 2018a). Thomson (2007) combined the school time table, learning tools, and school spaces with interviews and observations.

Youth exposed spatial injustice and surveillance of themselves and others at school (Krueger-Henney, 2015; Schmidt, 2015; Thomson, 2007), in the youth prison (Annamma, 2018a), and in the community (Rubel et al., 2016) via systems of spatial and social control. Maps revealed systems of surveillance in public high schools, including the presence of School Safety Agents, police officers, metal detectors, and surveillance cameras (Krueger-Henney, 2015).

While hyper-surveilled, youth also felt unrecognized and unseen by staff (Krueger-Henney, 2015; Annamma, 2018a; Thomson, 2007), their peers (Schmidt, 2015; Thomson, 2007), and particular community members (Rubel et al., 2016). Students also narrated examples of marginalizing and socially stereotyping particular groups of peers (Schmidt, 2015).

Through critical spatial inquiry, the authors uncovered how youth were repositioning themselves in response to marginalization (Davies & Harré, 1990) as well as how youth and teachers were disrupting exclusionary mechanisms. For example, Riveara shared her goal of graduating from high school and being with her daughter despite the hyper-surveillance she experienced in the detention center (Annamma, 2018a). Youth also discussed how effective teachers scaffolded their success by changing the level of challenge of the work as their confidence and success increased (Thomson, 2007). In summary, the research reviewed here illustrated how scholarship influenced by critical spatial theories and analyses can support an examination of schooling mechanisms across spaces and youth's responses to said mechanisms. Still, girls of color with intellectual and developmental disabilities are underrepresented in the scholarship presented here.

Summary and Implications

The reviewed studies here were significant to this study. First, they demonstrated how expansive spatial analysis can be across scholastic spaces and mechanisms. From Thomson's (2007) discussion on "counter-public spaces" (p. 26) in alternative schools to Annamma's (2018a) explanation of consequential geographies in the school-prison nexus to using mapping to uncover injustices with youth (Krueger-Henney, 2015; Rubel et al., 2016; Schmidt, 2015), the reviewed studies here provided breadth and depth, feature and shape to the possibilities of critical spatial theories in educational research with and for disabled girls of color. What is

equally important to the purpose of this study is that the reviewed literature stems from or has been influenced by broader conceptualizations of space as mutually constituted (Douglass, 1881; W. E. B. Du Bois, 1989). It is the sociospatial dialectic (Harvey, 2009; Lefebvre, 1991; Soja, 1980, 2010) that afforded a deep and nuanced interrogation of interlocking systems of oppression (e.g., racism, ableism, sexism) in schools for youth.

Second, while the potential to use spatial theory in disability studies received attention in 2001 (*Urban Studies* journal) and 2012 (*International Journal of Inclusive Education* journal), there were no studies examining how space and/or a sociospatial dialectic impact schooling mechanisms for girls of color with intellectual and developmental disabilities. As Waitoller and Annamma (2017) recently stated, the possibilities of using spatial analysis in education have yet to be fully realized. Even though extant research has examined general education placement for youth with intellectual and developmental disabilities (Wehmeyer, 2006), there is opportunity to dig deep and critically examine inequities from a spatial lens. In sum, we are at the surface of culling from spatial theories in education research (Waitoller & Annamma, 2017) as disabled girls of color elucidate their school experiences with spatial tools.

Discursive Practices as Analytical Tools

How have scholars used discursive practices as analytical tools to examine schooling mechanisms for girls (of color) with (intellectual and developmental) disabilities in (middle and high) school?

Scholars of critical discourse analysis recognize how discursive practices (e.g., talk, texts, actions) function to produce societal ideologies and distribute power (Wodak & Meyer, 2016). Discursive practices also operate as social practices and cultural tools mediating relationships of power and privilege through social interaction, knowledge, and meaning construction (Foucault,

1972, 1982; Rogers, 2011). In other words, we make meaning of our social world through discursive acts. Essentially, discursive practices can play a role in transforming society as people use discursive practices in creative and agentic ways, thus exposing the dialectic nature of discursive practices and ideologies (Gee, 2011; Rogers, 2011).

In the classroom, teachers play a role in how discursive practices are produced in innovative and transformative ways (Boyd & Markarian, 2015; Cazden & Beck, 2003; Michaels & O'Connor, 2015). That said, how meaning-making occurs in the classroom is dependent on the options afforded to youth and the subsequent choices the students make while cyclically considering what is afforded, to whom, and how. Therefore, a focus on discursive practices in schools can help in understanding how power and ideology operate through interactions between youth and school staff (Ferri & Connor, 2005). In fact, discursive practices can be especially powerful tools considering the historical and institutionalized deficit-laden constructions of race (Ladson-Billings, 1998) and disability (Allan, 1996; Wehmeyer et al., 2008) produced in schools. Such institutionalized approaches to learning commonly hold that youth are generally powerless and without their own knowledges (Rogoff, 2003), youth of color are failing and deviant (S. P. Carter, 2006), and disabled youth are deficient and lacking (K. M. Collins, 2003). This may be specifically true for girls of color with intellectual and developmental disabilities.

Yet, it is also important to examine how students actively contribute to discursive practices in the classroom. Youth may engage in talk and actions that reproduce teacher-student power structures or protect peers, such as when students take up responder and helper roles (Brooks, 2015). Even when students maintain relatively powerless roles, they may simultaneously and subtly claim elusive and brief authority by sharing personal information (Brooks, 2015), asking questions (K. M. Collins, 2011a), and telling alternative narratives (K. M.

Collins, 2011b). Other nuanced shifts include modifying topics discussed, attempting to change turn rotations, or refuting claimed truths (Candela, 1999). Youth may also reposition themselves and make an independent choice different from those suggested by the teacher (Shogren, 2013) or engage in collective decision-making when working with classmates on a project or socializing outside of class (e.g., passing periods, lunch). That said, within inequitable classroom power dynamics and structures, students' discursive practices may operate to briefly or subtly reposition (Davies & Harré, 1990) themselves or disrupt deficit-laden ideological systems.

Participation Structures

Discursive practices in schools include, but are not limited to, talk, texts, and actions. One framework for examining discursive practices between teachers and students are participation structures (Candela, 1999; Chouliaraki, 1998; Moje, 1997; Philips, 2001). Participation structures are socially organized interactions guided by explicit and implicit expectations as well as verbal and nonverbal norms (Beneke & Cheatham, 2017). School staff typically determine the participation structures students are expected to engage in (Au, 1980).

One prominent participation framework in U.S. classrooms is the initiation-response-evaluation (IRE) sequence (Mehan, 1979). The IRE participation structure is often found within classroom discussions and assumes a predictable pattern (Chouliaraki, 1998; Moje 1997). The teacher elicits a response from a student, the student answers, and the teacher evaluates the response. The individualistic communication style of IRE contrasts a more communal approach wherein teacher elicitation yields a choral response (Gratier, Greenfield, & Isaac, 2014). In an IRE framework, teacher initiation is often a closed, known-answer question as opposed to an open question in which the teacher does not know the answer (Cazden, 2001). The IRE structure can also be used in one-to-one, dyadic conversations. Soliciting a known-answer response by

asking a closed question is an ideological practice that positions students based on what teachers expect them to know and do (Michaels & O'Connor, 2015).

Discursive practices in general education classrooms. Scholars have recently investigated how discursive practices animated power, inclusion, and exclusion in general education classrooms. At times, adults' classroom talk and actions can exclude youth in the classroom. In more than one study, scholars showed how youth were viewed as problems (K. M. Collins, 2011a; Hinchman & Young, 2001; Orsati & Causton-Theoharis, 2013) through adults' discursive practices. Sometimes youth membership was conditional upon teachers controlling students' behaviors. For Desuna, a Black girl receiving gifted and talented services, this was illustrated through her teacher's disregard of her opinions in class (Hinchman & Young, 2001). This message about Desuna was public and thus, transmitted to her peers who actively ignored her or disagreed with her ideas. In another study, school staff used the word "wild" to position students with autism in particular ways (Orsati, 2015). When school staff spoke about "wild," then a message was received that unwanted and non-compliant behaviors were occurring and adults needed to intervene by encouraging students to wear weighted vests (Orsati, 2015). Thus, discursive practices in the classroom also illuminate how students are positioned by their teachers, impacting youths' participation and identities as learners.

Students may also position one another and reposition (Davies & Harré, 1990) themselves in response to marginalization. Dean and colleagues (2013) recently examined a peer partner lunch group designed to foster social interaction for one girl with autism in elementary school (race not reported). The authors noticed nuanced moves by Cindy and her peers that indicated forms of acceptance and rejection of one another (Dean et al., 2013). These moves

included talk as well as actions, such as facial expressions and gestures. Cindy repositioned herself by noticing but ignoring her peers' responses and persisting with her narratives.

At times, youth also reposition in response to their teachers' positioning. For example, Larnell, a 5th grade Black boy with learning disabilities, was sent to the "Private Box" in another area of the classroom away from his peers (K. M. Collins, 2011a, p. 779). In response, Larnell moved his chair from behind the bookshelf (where the Private Box was located) and remained there without any learning tools, still in a position to see the lesson, for the remainder of the class period. In another study, Christopher repositioned himself in response to his teacher by opting out of instructional contexts, sharing stories about his strengths and interests, and taking on roles or parts in activities that best spoke to his personhood (K. M. Collins, 2011b).

Discursive practices can show how teachers position students, how peers position each other, and how youth reposition in response to marginalization in general education assignments. In the reviewed studies, discursive practices held social and material consequences for youth, such as in the form of pressure vests (Orsati, 2015), sociospatial exclusion (K. M. Collins, 2011a), stigmatization (Hinchman & Young, 2001), peer rejection (Dean et al., 2013), and decreased participation and increased withdrawal (Hinchman & Young, 2001). That said, girls of color with intellectual and developmental disabilities are underrepresented in this research.

Discursive practices in special education classrooms. Little is known about the discourse in special education classrooms, particularly for girls of color with intellectual and developmental disabilities. Scholars have explored participation in special education settings in the U.S. in terms of the ways students conform to educators' behavior expectations (Pennington & Courtade, 2015) and how teacher talk mediates access to curricula in Australian resource classrooms (Hanrahan, 2004). Moreover, scholars have also examined the interaction of

discursive practices and materializations (e.g., Causton-Theoharis et al., 2011; Kurth et al., 2016; Schnorr, 1990), which I discuss later. Yet, few have used critical discourse analysis to investigate discursive practices in special education classrooms.

Pennington and Courtade (2015) measured the number and type of response opportunities school staff provided youth with intellectual and developmental disabilities. The authors found that responding was unidirectional and included youth following directions, answering questions, and participating when asked (Pennington & Courtade, 2015). In addition, teachers provided fewer opportunities to respond and less positive feedback in separate schools. In fact, the classroom discourse followed an IRE sequence, without the evaluation component. In other words, not only were the students not encouraged to initiate talk or engage in reciprocal conversations, but the school staff rarely gave positive feedback or error correction.

In a middle school Australian resource classroom, Hanrahan (2004) used critical discourse analysis to study how language was used to alienate youth from Science curricula through relational processes embedded within the discourse. Hanrahan (2004) found the analysis in IRE participation structures but the teacher used discourse beyond the teacher-focused IRE structure. Instead, the author revealed the different discursive roles the teacher took up (e.g., science transmitter, caregiver/facilitator, behavior regulator). In addition, the teacher used varied aspects of discourse to “reduce the power difference,” and focused the classroom dialogue on learning processes instead of concentrating on conveying information (Hanrahan, 2004, p. 16).

Summary and Implications

The research reviewed here was important for the current study. First, there was a significant amount of research investigating discursive practices (Howe & Abedin, 2013; Mercer & Dawes, 2014; Rogers et al., 2016), and participation structures across grade levels (Au, 1980;

Candela, 1999; Cazden & Beck, 2003; Chouliaraki, 1998; Moje, 1997; Philips, 2001). However, there was a lack of research focused on disabled girls of color. Thus, the studies reviewed here demonstrated the potential for examining how discursive practices influence schooling mechanisms in middle school (Hanrahan, 2004) and middle and high school (Pennington & Courtade, 2015) for girls of color with intellectual and developmental disabilities. In addition, conceptualizing discursive practices to include texts and actions expands critical discourse analysis to be more inclusionary as girls of color with intellectual and developmental disabilities may use sign language, eye gaze, and speech generating devices. In other words, critical discourse analysis techniques (Gee, 2011; Rogers, 2011) can be applied when an array of communication styles exist to examine how disabled girls of color are positioned as learners.

Second, girls of color with intellectual and developmental disabilities may also resist marginalization by repositioning (Davies & Harré, 1990) themselves through talk, texts, and actions. However, little is known about what this might look like or sound like. For youth with intellectual and developmental disabilities, this has been framed from a behavioral response lens and seen as “challenging” or “problem behaviors” (Bambara, 2004, p. 170). However, I studied discursive practices to illustrate how purposeful moves are taken up by disabled girls of color when responding to individual, school, and societal marginalization. Moreover, focusing on how girls of color with intellectual and developmental disabilities respond can help us to better understand how schooling mechanisms are generated through discursive practices.

Materializations and Discursive Practices as Concomitant Analytical Tools

How have scholars used materializations and discursive practices together as analytical tools to examine schooling mechanisms for girls (of color) with (intellectual and developmental) disabilities in (middle and high) school?

Scholars have used observations of discursive practices and materializations to study the educational experiences of youth with intellectual and developmental disabilities in grades K-12 in special education and general education classrooms (Causton-Theoharis et al., 2011; Kurth et al., 2016; Schnorr, 1990). By doing so, they have captured how discursive practices and materializations operated in tandem to afford or constrain meaningful academic and social experiences for these youth, including girls of color with intellectual and developmental disabilities. The three reviewed studies found adults frequently controlled the discursive practices in the classroom by talking often, even amongst themselves, while youth had few opportunities to talk to their teachers or peers (Causton-Theoharis et al., 2011; Kurth et al., 2016; Schnorr, 1990). Moreover, students with intellectual and developmental disabilities were often engaged in non-academic tasks (e.g., coloring, puzzles) resulting in substantial amounts of non-instructional time (Causton-Theoharis et al., 2011; Kurth et al., 2016; Schnorr, 1990).

The ways in which adults influenced materializations also impacted youth. Kurth and colleagues (2016) cited the locations of special education classrooms in areas of the school where the teachers declared “nobody ever comes” (p. 237). Another geographical implication was revealed when the high school students were transitioning from class to class, at their lockers, and going to lunch, while youth with intellectual and developmental disabilities were in the special education classroom. Since students did not transition through the school at the same time as their peers, there were few to no opportunities for incidental social opportunities with peers outside of the students in the special education classroom (Kurth et al., 2016).

Discursive practices and materializations also led students to position one another in particular ways. Causton-Theoharis and colleagues (2011) cited students and adults positioning one another with disrespectful talk, thus compromising the classroom community climate. In two

studies, peers made discursive moves with spaces and learning tools based on the messages they were receiving from the adults (Causton-Theoharis et al., 2011; Schnorr, 1990). In one first grade classroom, Peter's classmates used his space (e.g., desk) and learning tools (e.g., crayons) when he was not in class claiming "Yea, he doesn't ever notice" (Schnorr, 1990, p. 235). That said, few scholars have examined discursive practices and materializations to uncover the school experiences of youth with intellectual and developmental disabilities, specifically for disabled girls of color. At the time of this review, I was only able to find one study that included a girl of color with intellectual and developmental disabilities (Kurth et al., 2016).

Critical Discursive-Materialization Examinations

Through qualitative inquiry two recent studies examined how materializations and discursive practices worked in tandem to influence schooling mechanisms for girls with intellectual and developmental disabilities (race not specified; Gabel et al., 2013) and girls of color with disabilities (disability not specified; Caetano, 2014) from a critical discourse and critical spatial lens. Despite being miles apart, Gabel and colleagues (2013) in the United States and Caetano (2014) in Brazil, both studies revealed how the discursive practices and materializations of special education classrooms and disability demonstrated "the space of educational apartheid" (Caetano, 2014, p. 688).

For example, school geographies and classroom texts contributed to the ideology of disability as deficit. In the U.S., girls with intellectual disability were assigned to certain places within the school (special education wing; Gabel et al., 2013). In Brazil, girls of color with disabilities were associated with "problems" as designated on a classroom board with each student's name and what "problem each child has" (Caetano, 2014, p. 692). Also, space and adult-powered discourse impacted where and when the girls were in/visible within the school.

This influenced sociality, including the kinds of relationships girls could have with peers in class (Caetano, 2014) or the cafeteria (Gabel et al., 2013). In other words, adults held the power and discretion to decide when and why students had access to varied school geographies and what ideologies were produced or inferred in relation to particular spatialities (Caetano, 2014; Gabel et al., 2013). In sum, the discourse of disability held spatial and ideological consequences for girls of color with disabilities in Brazil and girls with intellectual disability in the U.S. More scholarship is needed to investigate how materializations and discursive practices work together and impact the school experiences of disabled girls of color.

Summary and Implications

The reviewed scholarship here was important to this study. First, analyzing the relationships between discursive practices and materializations can support scholars and practitioners to understand how inequities are generated through discursive practices and materializations. Here, scholars revealed how school staff, and sometimes students, reproduced dominant and deficit-laden ideologies about youth with intellectual and developmental disabilities (Caetano, 2014; Causton-Theoharis et al., 2011; Gabel et al., 2013; Kurth et al., 2016; Schnorr, 1990). In addition, the scholarship reviewed here revealed how discursive practices and materializations worked in tandem to reproduce systems of oppression for girls (of color) with intellectual and developmental disabilities. Yet, some explorations were missing. For example, we never heard from girls of color with intellectual and developmental disabilities. In addition, it was not apparent how teachers or school staff disrupted or dispelled inequities through inclusionary schooling mechanisms. Also, racism, linguisticism, and sexism were underexamined.

Second, I believe that analyzing how discursive practices and materializations interact can reveal nuances or subtleties in everyday school experiences that often go unnoticed. Such

subtleties can transform an inclusionary mechanism into an exclusionary one, wherein certain students are dismissed, ignored, and pushed out (Erevelles, 2011a). These nuances give teachers palpable illustrations of how disabled girls of color understand and experience schooling, from their perspectives. Moreover, discursive practices and materializations support opportunities to share how inclusionary mechanisms are transforming schools.

Finally, discursive practices and materializations are intertwined and political. Consequently, they are powerful analytical tools when used alone and even more so when used together (Armstrong, 1999; Foucault, 1972, 1982; S. Jones et al., 2016; Thiel & Jones, 2017; Soja, 2010). This collective instrumental strength is vital when examining how schooling mechanisms interact with or are mediated by systems of power (e.g., sexism, racism, ableism), particularly for girls of color with intellectual and developmental disabilities.

Conclusion

This dissertation study was framed by multiple areas of literature because I aimed to extend current understandings of how schooling mechanisms are generated through materializations (e.g., processes that result in school geographies, classroom layouts, learning tools) and discursive practices (e.g., talk, texts, actions) for disabled girls of color in middle and high school. In the next chapter, I present my research design and analytic process as informed by my conceptual framing.

Chapter 3: Methodology

In the first two chapters I asserted that the experiences of girls of color with intellectual and developmental disabilities in middle school and high school are underrepresented (Erevelles & Minear, 2010; Sinclair et al., 2018). Moreover, youth with intellectual and developmental disabilities experience academic, social, and disciplinary inequities but there is a shortage of research examining what that means for girls of color with intellectual and developmental disabilities (Sinclair et al., 2018). Consequently, I sought to understand how schooling mechanisms were generated through discursive practices (e.g., talk, texts, actions) and materializations (e.g., processes that result in school geographies, classroom layouts, learning tools) for disabled girls of color from their perspectives. Two questions guided this inquiry:

1. How are inclusionary and exclusionary schooling mechanisms generated through materializations for girls of color with intellectual and developmental disabilities?
2. How are inclusionary and exclusionary schooling mechanisms generated through discursive practices for girls of color with intellectual and developmental disabilities?

In this chapter, I describe how I answered these questions through my research design and analytic process, as supported by my conceptual framing, wherein I conduct a qualitative multiple case study (Merriam & Tisdell, 2015) informed by critical and participatory paradigms (DiSalvo, Nourbakhsh, Holstius, & Louw, 2008; Garcia et al., 2013; Reilly, 2010). To this end, I first explain my strategy of inquiry. Then, I describe my research design as informed by my plural paradigmatic situatedness. Finally, I discuss my data collection and analysis plan.

Strategy of Inquiry

In case study research, scholars aim to provide a thorough understanding of a case or cases (Bhattacharya, 2017). A case is a bounded system as determined by the scholar (Merriam

& Tisdell, 2015). Existing literature and theoretical perspectives guide the researcher in justifying what is considered a case (Bhattacharya, 2017). In educational research, a scholar may choose from many options in which to bound a single case such as a student, group of students, teacher, classroom, or school (Merriam, 2001). In this study, I identified each student participant as a case. Then, within the bounded system, I examined the phenomena or quintains (Stake, 2006) which were multi-faceted, multiply contextual, and complex (Miles & Huberman, 1994). Here, the phenomena were inclusionary and exclusionary schooling mechanisms.

Case study was an appropriate strategy of inquiry for this empirical project for four reasons. First, case study is suitable when the research questions require in-depth inquiries and I sought to develop a thorough understanding of each case – each participant’s school experiences (Bhattacharya, 2017). Second, my research questions were explanatory, framed as “how” questions, and process-oriented (Yin, 2017). This allowed me to examine schooling mechanisms by focusing on the perspectives of girls of color with intellectual and developmental disabilities. Third, a case study design is appropriate when the focus is on contemporary events (Yin, 2017). In this study, I directly observed teaching and learning and engaged in interviews and focus groups with the primary and secondary participants focused on the present moment. Fourth, case study can afford new understandings, relationships, and concepts inductively as bounded by the case and revealed across cases (Merriam & Tisdell, 2015). In summary, case study was an appropriate strategy of inquiry for thorough understandings of each participant’s experiences.

Research Design

Each case included a girl’s 1) experiences and perspectives of materializations through photographs, maps, interviews, and focus groups; 2) the discursive practices that emerged between her and her teachers during learning activities; and 3) context from secondary

participants (focal teachers) interviewed in each case. Therefore, each student was encircled by the study of the phenomena of inclusionary and exclusionary schooling mechanisms (Merriam & Tisdell, 2015). I used a multiple case study design, which incorporates more than one case and focuses on what the cases collectively tell the researcher about the phenomena (Bhattacharya, 2017). The power of this design is in its attention to the local situation and contexts, not in how a case represents the other cases but how a case represents the phenomena studied (Stake, 2006). In these ways, multiple case study as a strategy of inquiry allowed me to diffuse the single story of disability, inclusion, and exclusion (Winn, 2011).

Paradigmatic situatedness. Every strategy of inquiry, and subsequently every research design, is guided by particular paradigmatic locations, including epistemological, ontological, axiological, and methodological assumptions. I situated this multiple case study within the critical and participatory paradigms (Denzin & Lincoln, 2011; Tuck & McKenzie, 2015). Therefore, my paradigmatic postures afforded me the opportunity to cull from previous critical and participatory case studies as well as to use certain methods.

First, as guided by my conceptual framing of DisCrit (Annamma et al., 2013) and sociocultural theory (Lave & Wenger, 1991; Lewis et al., 2007; Rogoff, 2003; Shweder, 1990; Vygotsky, 1978), this critical project assumed knowledge was mediated by power relations and control (Tuck & McKenzie, 2015). Therefore, I investigated how power and oppression were (re)produced through inequitable power structures in schools. By situating this empirical project within the critical paradigm, I explored DisCrit tenet one, which upholds the varied ways racism and ableism operate interdependently (Annamma et al., 2013; Erevelles, 2002; Ferri, 2010). I also studied DisCrit tenet six which acknowledges whiteness and ability as property, thus affording economic, political, and social rights and benefits to those who are constructed as

“white” and “able-bodied” while withholding benefits from those who cannot claim whiteness, “ability,” and “smartness” (Annamma et al., 2013; Harris, 1990; Leonardo & Broderick, 2011). Each of these were explored through data collection methods explained below.

In addition, while I cannot claim this was a participatory project from start to finish, there were elements of participatory research (e.g., participant analysis, photovoice, mapping, Photographer’s Symposium). As Gaventa (1988) described, a participatory inquiry positions the participants as researchers in the project. Through some of the methods I discuss next, I was not acting alone as the sole investigator (Camarota & Fine, 2008). Rather, I was employing methods wherein the primary participants were collecting and analyzing data. By situating this project within the participatory paradigm, I engaged DisCrit tenets four and seven (Annamma et al., 2013). I attempted to position disabled girls of color as primary research partners (Annamma et al., 2013) and acknowledged all forms of their resistance (Annamma et al., 2013; Davies & Harré, 1990; Paris & Winn, 2014b). Thus, combining the two paradigms resulted in a critical and participatory multiple case study, a collaborative project that sought to expand knowledge with and alongside participants as researchers (Kinloch & San Pedro, 2014) to transform oppressive structures and illuminate emancipatory possibilities (Denzin & Lincoln, 2011).

Through this dissertation study, I centered disabled girls of color and collaborated with them to understand their experiences with schooling mechanisms. Therefore, the students were the focal participants for both research questions and teachers were secondary participants. Next, I discuss my research methods, including site and participant selection and researcher positionality. Then, I outline data collection and analysis. See Appendix A for research timeline.

Site Selection

This project was situated in one large Midwestern City School District (MWSD⁹). In 2015, there were 22,016 students in MWSD and 47.5% of the student population identified as Latino/a, 30.6% as Black, 12.2% as white, 6.3% as Asian, 2.7% as Multiracial, 0.4% as Native American/Alaska Native, and 0.3% as Native Hawaiian/Pacific Islander (Office for Civil Rights, 2015). Students and teachers from one middle school, Bessie Smith Middle School, and one high school, Frida Kahlo High School, within MWSD participated in this study. There was a particularly high number of youth with intellectual and developmental disabilities attending Frida Kahlo High School as the school district not only assigned students with intellectual and developmental disabilities who lived in the neighborhood to go to school there but also assigned youth with intellectual and developmental disabilities who lived anywhere in the school district's boundaries to that school (Ms. Randle, Frida Kahlo High School Special Education Teacher, personal communication, March 2, 2018). I chose Bessie Smith Middle School because the students from there would also attend Frida Kahlo High School beginning in 9th Grade. Next, I review academic and disciplinary assignment statistics for the district wherein assignment is defined as: where the system places students academically and behaviorally, and the related affordances or constraints of those placements (Annamma & Morrison, 2018a).

Academic assignment in MWSD. Here I review the Office for Civil Rights (2015) data first discussing assignment broadly and then assignment based on IDEA (2004) disability categories in MWSD. Black students and white students were overrepresented in 1) special education assignment when compared to overall district enrollment; 2) the disability category

⁹ I use pseudonyms throughout the manuscript to protect participants' identities, including Meena's home country and home language. The students chose their own pseudonyms. I chose pseudonyms for the school sites and teacher participants.

intellectual disability when compared to overall district enrollment; and 3) in the disability category of autism (Office for Civil Rights, 2015). When compared to overall district enrollment, Black youth and Latinx youth were overrepresented in the disability category developmental delay (Office for Civil Rights, 2015). Notably, the data reported that there were no girls with autism in the district in 2015 (Office for Civil Rights).

Disciplinary assignment in MWSD. The Office for Civil Rights (2015) provided data on in-school and out-of-school suspensions as well as instances of restraint and seclusion. For each category, I review the data first discussing youth of color with disabilities and then girls of color with disabilities. The data was not disaggregated by disability type.

One suspension in MWSD. Black youth, multiracial youth, and white youth with disabilities were overrepresented in receiving one out-of-school suspension. Black youth with disabilities and multiracial girls with disabilities were overrepresented in receiving one or more in-school suspensions (Office for Civil Rights, 2015). Multiracial girls with disabilities were overrepresented in receiving one out-of-school suspension (Office for Civil Rights, 2015).

More than one suspension in MWSD. Black youth, multiracial youth, and white youth with disabilities were overrepresented in receiving more than one out-of-school suspensions. Multiracial girls with disabilities were overrepresented in receiving more than one out-of-school suspension (Office for Civil Rights, 2015). No incidents of mechanical or physical restraint or seclusion were reported (Office for Civil Rights, 2015).

In conclusion, in 2015, multiracial girls with disabilities were overrepresented in all three reported categories of disciplinary assignment in MWSD (Office for Civil Rights).

Consequently, MWSD reflected national trends of overrepresentation of youth of color with

disabilities in both academic and disciplinary assignment making it an ideal place to study inclusionary and exclusionary schooling mechanisms with disabled girls of color.

Participant Selection

This study included six disabled girls of color in middle and high school as focal participants (see Table 1). At least one teacher who knew each girl well and was interested in examining their practices through this study was invited to participate as a secondary participant.

Student participant sampling. Girls of color with intellectual and developmental disabilities were purposively sampled aligning with the aims of this study (Lincoln & Guba, 1985). Inclusion criteria for primary participants encompassed girls who (a) self-identified or whose families identified them as girls of color; (b) had been labeled by school systems as having autism, cerebral palsy, deaf/blindness, developmental delay, intellectual disability, multiple disabilities, and/or traumatic brain injury according to disability terms and definitions found within IDEA (2004); (c) attended a middle school or high school (including a postsecondary program on the high school campus) in the school district; (d) were 11-21 years old; (e) had a means to communicate with me, the interviewer, using a variety of communication methods (e.g., natural speech, speech generated by a voice-output device or a selection made on a low-tech communication board, vocalizations, gestures, sign language, eye gaze); and (f) were interested in participating in a photography project and sharing about their school experiences. Disabled girls of color who attended either special education or general education classes or both were invited to participate.

Participant inclusion in analysis. Originally, I had planned for four students as primary participants and four teachers as secondary participants. When more students showed interest, I wanted to honor their interest and willingness to share their experiences with me. This was a

decision I made on the ground. I knew this meant a larger corpus of information from which to draw data. It was difficult to choose and include only six focal student participants from the original nine total student participants in the analysis but was necessary given the logistics. I journaled about it, engaged in peer debriefing several times, and connected with my dissertation committee members. Several steps guided my rationale for participant inclusion in for maximum variation in data analysis. I thought this would tell a richer story than a more homogenous participant group.

First, I included one participant from each of the four special education classrooms the girls were assigned to. Since Tiffany and Jimena were the only girls assigned to their classrooms participating in the project, they were included in the data analysis. Next, I thought about students who used augmentative and accessible communication supports and tools within the remaining two special education classrooms represented. This included Meena, Amy, and Luna. When Luna's teacher prevented her from attending the community-based instruction trip to the local arcade during phase two of the project, it became difficult for me to conduct a second set of observations for Luna for two reasons. First, time constraints made it difficult to conduct two observations in a second setting or content area. Second, there were few observation options of teaching and learning in her classroom. Because I only had three of the minimum four observations for Luna's case, I opted to exclude Luna's stories from the analysis. Thus, Meena and Amy were the next two focal participants included in the analysis. Finally, thinking about the remaining four participants, I chose to include Rosa and Emma-Mae in the analysis. This decision was based on participant age. Rosa was one of the older participants and Emma-Mae was the youngest. All six girls' perspectives and experiences brought rich and valuable lenses to the research questions. In sum, I included the experiences of six of the nine girls of color with

intellectual and developmental disabilities who participated in this project in the analysis. Please see Table 1 focal for participant demographics.

Table 1

Error! Reference source not found.**Error! Reference source not found.****Error! Reference source not found.***Student Participant Demographics*

Participant	Age	Grade	Race	Disability labels noted in student Individualized Education Program (IEP)	Disability labels noted on Parent/Guardian Demographic Form
Amy	16	11 th	Hispanic	Intellectual Disability; Speech/Language Impairment	Down syndrome; Speech/Language Impairment
Emma-Mae	11	6 th	Black	Intellectual Disability; Speech/Language Impairment	Autism; Attention deficit/hyperactivity disorder (ADHD)
Jimena	19	Post-Secondary	Hispanic	Intellectual Disability; Speech/Language Impairment	Multiple Disabilities; Vision Impairment/Blindness; Cerebral Palsy
Meena	14	8 th	Middle Eastern	Intellectual Disability; Speech/Language Impairment	Speech/Language Impairment; Orthopedic Impairment
Rosa	18	12 th	Mexican	Intellectual Disability; Speech/Language Impairment	Emotional Disability; Specific Learning Disability
Tiffany	17	12 th	Mexican	Intellectual Disability; Speech/Language Impairment	Specific Learning Disability; Speech/Language Impairment

Teacher participant sampling. I purposively sampled educators as secondary participants (Lincoln & Guba, 1985). Inclusion criteria for secondary participants included teachers who (a) were nominated by student participants and (b) were interested in talking about and reflecting on materializations and discursive practices. Nine teachers consented to classroom

observations and a total of five teachers, one per each case, also participated in the two-phase interview component of the study.

Two teachers from the middle school and three at the high school (described below) participated in the two interviews (denoted with an asterisk in Table 2). I asked only one teacher per student case to participate in the teacher interviews because the study is centered on the girls' perspectives. Said differently, I wanted to ensure the girls' experiences were emphasized (Annamma et al., 2013; Paris & Winn, 2014b) and teacher perspectives did not overshadow their stories. See Table 2 for participants by case.

Table 2

Participants and Content Area Observations by Case

Case	Student participants	School	Teacher participants	Content area observations
1	Amy	Frida Kahlo High School	Mr. Clifford*	Language Arts (Special Education)
			Mr. Clifford	Community Based Instruction (Special Education)
2	Emma-Mae	Bessie Smith Middle School	Ms. Taub and Ms. Snow	Language Arts (Special Education)
			Ms. Summitt*	PE (General Education)
3	Jimena	Frida Kahlo High School	Mr. Armstrong	Choir (General Education)
			Ms. Randle*	Language Arts (Special Education)
4	Meena	Bessie Smith Middle School	Ms. Taub* and Ms. Snow	Language Arts (Special Education)
			Mr. Fenn	Theater (General Education)

5	Rosa	Frida Kahlo High School	Mr. Clifford*	Language Arts (Special Education)
			Mr. Clifford	Community Based Instruction (Special Education)
6	Tiffany	Frida Kahlo High School	Ms. Forrester*	Art Forms (General Education)
			Ms. Mayer	Jewelry (General Education)

Recruitment. I recruited participants following several processes to ensure access to participation. First, I obtained permission from MWSD officials and school principals. I had teacher contacts at Bessie Smith Middle School and Frida Kahlo High School in MWSD and asked them directly if there were girls of color with intellectual and developmental disabilities at their schools. I provided information to students, families, and teachers in multiple forms (i.e., physical flyers, recruitment meetings). Specifically, I held recruitment meetings for disabled girls of color during lunch and homeroom. Students with intellectual and developmental disabilities at Frida Kahlo High School arrived to and departed from school earlier than most students at the school because they were assigned to a distinct set of buses serving students receiving special education services and supports. Therefore, I could not recruit after school. I also spoke with students individually whom had been snowball sampled (Lincoln & Guba, 1985).

Disabled girls of color officially joined the study after I obtained written permission from parents and/or guardians (see Appendix B) and the students had signed assent forms (Appendix C). During the consent and assent phase, I inquired with each student if she had particular classrooms and teachers whom she would like me to observe. Amy and Rosa only had one teacher (Mr. Clifford) and both girls nominated him. Tiffany nominated two general education teachers (Ms. Forrester and Ms. Mayer). Jimena nominated her special education teacher (Ms.

Randle) and her Choir teacher (Mr. Armstrong). Emma-Mae and Meena were in the same special education classroom with Ms. Taub and Ms. Snow. Emma-Mae nominated Ms. Taub and the Physical Education (PE) teacher (Ms. Summitt). Meena nominated Ms. Taub and the Theater teacher (Mr. Fenn). Ms. Taub had known Meena longer than Mr. Fenn, so I included Ms. Taub in Meena's case. According to Emma-Mae, Ms. Summitt was her favorite teacher, so I included Ms. Summitt in Emma Mae's case. While neither girl nominated her, I included observation data in the corpus when Ms. Snow was teaching spelling during Language Arts.

Next, all focal participants completed demographics questionnaires during their first interviews (see Appendix D). I also asked parents and guardians to complete a demographics questionnaire about their daughter (see Appendix E). I connected with Amy's mother, Jimena's mother, and Meena's family by phone to complete the demographics questionnaires. I spoke to Meena's parents with the help of a translator (Painda, a personal contact) as the family had recently immigrated to the United States and preferred to communicate in their home language. Painda completed a research partner consent form (Appendix F). When Ms. Randle required a paraprofessional accompany Jimena on her photography session and on the cartography portion of her second interview due to a school policy for students who have a history of seizures, I asked the two paraprofessionals to complete research partner consent forms. Once teachers (see Table 3) had consented (see Appendix G) to the study, I asked them to complete a demographics questionnaire (Appendix H) at the beginning or end of their first interview.

Table 3

Teacher Participant Demographics

Participant	Gender	Race	Disability(s)	Years Teaching
Randle	Female	White	None disclosed	5
Clifford	Male	White	None disclosed	10
Forrester	Female	White	None disclosed	4
Summitt	Female	White	None disclosed	9

Taub	Female	White	None disclosed	8
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Researcher Positionality

My concerns about critical projects of inquiry that focus on the experiences of girls of color with intellectual and developmental disabilities echoed through my analytic dialogues with mentors, supportive colleagues, and my own reflective praxis through journaling and memoing (N. Jones, 2010). Some questions I continually asked included: Who am I to be privileged with access to the stories girls of color with intellectual and developmental disabilities and their teachers tell me? Who am I to tell stories about the girls and their teachers? Which stories do I leave out? Which stories do I tell? What problems and powers represent my attempts to retell (N. Jones, 2010)? In the next section, I describe how points of commonality, interlocking oppressions, and building trust impacted my access to participants. Then, I describe how I upheld in-group variance and addressed societal and personal biases about groups and individuals. Finally, I discuss accessibility considerations for conducting research with disabled youth.

Access. Gaining access to primary and secondary participants was dependent on many factors including points of commonality amongst myself and the participants, interlocking systems of oppression that my participants face that I do not, and how I built trust.

Points of commonality. Points of commonality are the similarities we share. The participants and I shared gender and often times language. These two points of commonality were a small, but important, starting point as a sense of commonality and trust were required for girls of color with intellectual and developmental disabilities to share their vulnerabilities with me, a white woman, scholar, and stranger (N. Jones, 2010). This meant that I had to spend time with the girls in their schools, classrooms, and on class trips. I volunteered in classrooms at the high school 2-3 days a week for 4 weeks and for 2 days a week for 2 weeks at the middle school

so that the students could get to know me prior to recruitment (Boggis, 2011). Then during recruitment, I volunteered in classrooms and shared myself through “authentic participation in activities that matter[ed] to the participants” (Paris, 2011, p. 9). For example, I read books with the students at the public library. I cleaned the arcade machines with them on the community-based work trip. I worked with small groups of students in Math or with individual students in Language Arts. Yet, spending time was not enough. I considered how the research experience could be meaningful and generative for the focal participants.

I was dedicated to this being a useful, enjoyable, and generative project for the students as the primary participants. Therefore, I grounded this project in a humanizing research stance (Paris, 2011; Paris & Winn, 2014a) by critically thinking about problems and solutions with and alongside (Kinloch & San Pedro, 2014) girls of color with intellectual and developmental disabilities. Also, I put systems in place to maintain my axiological and paradigmatic commitments to the girls. Such systems included journaling reflexively (Merriam & Tisdell, 2015), pivoting to the literature to guide me (e.g., Brown, Ashkenazy, & Onaiwu, 2017; P. H. Collins, 2000; hooks, 2015), and learning from the cultural wealth held by the girls’ families encircling these girls (Yosso, 2005). For example, by talking with Amy’s mother, Jimena’s mother, and Meena’s parents, supplemental information helped me contextualize what I was witnessing and what the girls were sharing with me.

I shared more points of commonality with the teachers. I shared gender and race with the white female teachers. I was closer in age to many of the teachers and may have shared similar socioeconomic statuses. None of the teachers self-disclosed a disability on their demographic form or spoke openly about mental health, and neither did I. Therefore, I am uncertain if we shared these social locations. Despite having more points of commonality, I tried to gain their

trust and foster connection as some of the teachers may have been apprehensive to afford me access to their classrooms and teaching styles. Teachers are often marginalized or portrayed negatively as professionals in educational research. Therefore, I cultivated reciprocity with the teachers through listening, devoting time by volunteering, and connecting them with potential resources (Kinloch & San Pedro, 2014; Paris, 2011; Paris & Winn, 2014a).

As a teacher, I grounded this project with teachers as secondary participants in inquiry as an ongoing process of becoming through authentic interaction (Kinloch & San Pedro, 2014). In other words, I wanted this to be a constructive and humanizing experience for the teachers wherein they, in this complicated space of vulnerability, felt heard and valued. Some of the teachers and I grappled with tensions and uncertainties in an uncomfortable place of not knowing. This way of experiencing was dependent on how I framed my work alongside each teacher as a partner (Erickson, 2006). By doing so, I aimed to ensure what Winn (2011) powerfully stated, “Perhaps even most importantly, [teachers will] have the opportunity to really listen to and hear these girls’ dreams and nightmares, and to experience the humility in realizing that the girls are the true teachers” (p. 5).

Interlocking systems of oppression. The focal participants and I did not share race, ethnicity, age, or disability. I hypothesized the girls and I had disparate opportunities and access to power because of intersecting oppressions and hierarchical power structures that afforded (and continue to) power and privilege to me while withholding power and privilege from the girls. For example, my body was not hyper-surveilled when I was young like their bodies are, as disabled Black and Brown girls, in and out of school spaces. The (majority white) teachers I had when I was young upheld my ideas, needs, and aspirations. That said, the girls’ teachers may deem them different because they are girls of color with intellectual and developmental disabilities

(Erevelles, 2011b; C. Mitchell et al., 2016). Racism, ableism, linguicism, and ageism grant me authority (power), truth (school personnel may believe my story over a student's), and access (free movement about the building without an escort if I have a visible visitor's pass) in schools. In sum, interlocking systems of oppression hold real consequences for girls of color with intellectual and developmental disabilities that neither I nor their teachers experience.

Building trust. Throughout this empirical project, I thought about the ways I have been tested as a teacher, visitor, and participant. Dr. Nikki Jones (2010) referred to these realities as “authenticity tests” wherein my position as a researcher, belonging in some ways and not in others, afforded me access to particular personal information and experiences and not to others (p. 166). Authenticity tests from girls of color with intellectual and developmental disabilities looked and sounded different than those from their teachers. For example, sometimes Emma-Mae would respond with a joke or change the subject when I asked her a question. Emma-Mae also checked the audio recorder several times during each interview to see if it was recording. Perhaps these were moves to reserve access to information not afforded to me or to ensure her voice was heard. Some students may have used authenticity tests to see how I would react, if I could be trusted, or if I would honor their knowledge and experiences. For example, Amy told me a story about something she was really upset about. Instead of shifting the topic back out of fear of straying from the interview guide, I listened and engaged in a conversation with her about what mattered most. Another time, Rosa talked to me at length about her frustrations with the bus to and from the arcade. Here too, I listened to and talked with Rosa. We also tried to solution-generate together. Building trust meant that I must hold a humanizing stance (Paris & Winn, 2014a) and make it evident by honoring the girls' knowledge and experiences and engaging authentically (Kinloch & San Pedro, 2014) through listening and talking.

Representation. In this study, my participants and I co-constructed meaning as they shared stories and experiences through interviews, focus groups, and unstructured conversations during observations and photography sessions. As Bhattacharya (2017) explained, I was not able to represent anyone in their truest form because the participants' stories are re-presentations of what they told me during those moments. However, there were strategies that I employed to represent the participants while upholding in-group variance and addressing biases.

In-group variance. Intersectionality from a microinteractional lens avoids essentializing, sweeping judgements, and generalizations by aiming for contextualization (Crenshaw, 1993). Contextualizing participants' knowledge and experiences helped me avoid essentializing. To contextualize, I first had to understand the participants' experiences in cultural and historical contexts, not separate from them. I spent time in the school contexts learning about each school, neighborhood, and broader school district while developing an understanding of the cultural-ecological forces that motivated the patterns I observed (Adams & Kurtiş, 2017). This understanding included the relationships between the school's practices and the routine practices the students and teachers participated in as well as the dynamic nature of practice, engagement, and ecology (Gutiérrez & Rogoff, 2003). In other words, I expected regularities in participation across school spaces. While simultaneously, it was vital to recognize variations in the ways students and teachers participated and conceptualized the means and ends of their learning activities. I also honored in-group variance through ongoing member checks (Brantlinger, Jimenez, Klinger, Pugach, & Richardson, 2005) which I discuss later as part of trustworthiness.

Addressing societal and personal biases. Addressing societal and personal biases required a tool kit (Bonilla-Silva, 2018; Matias, 2016; Michael, 2015; Patel, 2016), reflection and action in and out of academic spaces (Freire, 2000), and a scholarly and personal commitment to

foregrounding and then unmasking interlocking systems of oppression (N. Jones, 2010) for girls of color with intellectual and developmental disabilities. This was and is an ongoing and life-long process as a problematic, white woman with power and privilege, and racism and ableism built-in. Simultaneously, I was dedicated to critical work grounded in a humanizing stance (Paris and Winn, 2014b). I employed known strategies for addressing societal and personal biases, aware there would be more strategies to come.

Participating in a critical inquiry with disabled girls of color and their teachers was one strategy for addressing societal biases. Through critical inquiry, the students and I problem posed, or used critical thinking, to examine current educational systems, structures, and processes (Freire, 2000). Problem posing helped identify how inclusionary and exclusionary schooling mechanisms were generated for girls of color with intellectual and developmental disabilities through materializations and discursive practices. For example, we discussed discrepancies in access to and use of electronic devices such as laptops and tablets during the focus groups at Frida Kahlo High School. Mr. Clifford discussed these same inequities during his first interview. Problem posing supported us as we contemplated strategies for change, holding youth and their teachers as solution-generators (Darder, 2002; Paris, 2011).

Concerning personal biases, I addressed my own preconceptions by recognizing that I have biases and then reflecting to understand and transform them. In addition, I regularly reflected through journaling and analytic dialoguing with mentors, supportive colleagues, and friends focused particularly on dysconscious racism (J. E. King, 1991) and dysconscious ableism (Broderick & Lalvani, 2017), including implicit and explicit bias. Peer debriefing was especially helpful as I grappled with how to re-present teachers and school systems without dehumanizing the actors within while maintaining that people and systems (re)produce inequities. In addition, I

leaned on theory (e.g., Annamma et al., 2013; W. E. B. Du Bois, 1924, 1989; hooks, 1994, 2015; Soja, 1980, 1996, 2009, 2010; E. T. Taylor, Gillborn, & Ladson-Billings, 2016) to guide new questions and expand my thinking. Through reflective practices, I asked myself why I was doing this work and who I planned to share it with? What was the purpose? (N. Jones, 2010; Patel, 2016). Reflexive processing supported addressing personal biases.

Accessibility. I discussed methodological implications of accessibility and adaptability when conducting research with disabled youth in chapter two and continue here. In order to adapt materials and activities, including access to cameras and cartographies as well as interview and focus group formats and contents, I returned to previous scholarship (e.g., Boggis, 2011; W. Mitchell, 2010; Wickenden, 2011b), what the girls told me they wanted and needed, what their families and teachers suggested, and my own classroom observations to prepare for all research activities. Next, I consider some of the concerns from existing research.

Scholars have discussed how conducting research with youth with intellectual and developmental disabilities who may use augmentative and alternative communication required reflexivity, creativity, and adequate time and resources (Boggis, 2011; Cameron & Murphy, 2002; Lloyd et al., 2006; C. Mitchell et al., 2016; W. Mitchell, 2010; Rabiee, Sloper, & Bereford, 2005; Simmons & Watson, 2015; Teachman & Gibson, 2013; Teachman, Mistry, & Gibson, 2014). For example, Boggis (2011) described the importance of developing rapport with youth and working at their pace. The author also discussed confirming understandings, while remaining mindful not to patronize or question accuracy, but to do so in a humanizing and respectful way. This reinforced the importance of member checking for me through iterative data collection and analysis (discussed later). Several authors have also written about participant and researcher fatigue (Boggis, 2011; Teachman et al., 2014) or anxiety (Teachman & Gibson, 2013) and the

importance of being mindful of this happening in real time. Being mindful of anxiety and/or fatigue meant that I actively looked for any signs (e.g., trouble focusing, yawning, difficulty understanding one another, disinterest, avoidance) in the student as well as myself and then I would offer to halt the activity to resume at another time (Boggis, 2011; Teachman et al., 2014). For example, Emma-Mae appeared anxious in the first interview as she stood up and sat down several times over the course of a few minutes. Seeing this, I offered that we stop and resume at a later time. She agreed and therefore, the first interview occurred over two sessions.

In addition, scholars have explained the importance of having a tool kit of adaptations, accommodations, and modifications for research activities (C. Mitchell et al., 2016; W. Mitchell, 2010; Simmons & Watson, 2015; Teachman & Gibson, 2013; Teachman et al. 2014). Tool kits were dependent on each student participant. Tool kits considered each girl's interests, language and mobility support needs, and preferred modes of expression (Boggis, 2011), which I understood better over time. Therefore, tool kits shifted and changed as I learned about each primary participant. Tool kits contained Talking Mats (Cameron & Murphy, 2002; Rabiee et al., 2005), warm-up activities (e.g., looking through, talking about, and placing photographs in photo albums together; Teachman & Gibson, 2013), and a collection of nonverbal interviewing methods (e.g., drawing, mapping, photographing; W. Mitchell, 2010). Communication partners during Amy's second interview and Meena's third interview (discussed later) could also be considered components of the tool kits. Talking Mats (Cameron & Murphy, 2002) were used as a supplementary tool during interviews with Amy, Jimena, and Meena. Talking Mats focused on a variety of topics relevant to each girls' current schooling experiences, including her feelings about particular classroom spaces, learning tools, and activities. Lastly, I was prepared with access to accessible technologies (Foley & Ferri, 2012) to adapt photography and cartography

activities, which I discuss later. In sum, components of each tool kit were based on the students (Boggis, 2011), thus demonstrating a humanizing stance to research (Paris & Winn, 2014b).

I have described the participants and explored my own positioning in relationship to them. I also discussed accessibility. Now, I shift to my data collection and analysis. First, I outline my three phases of data collection. Then, I discuss data sources and collection techniques. Finally, I discuss my data analysis techniques, including inductive and deductive analysis as well as procedures I engaged in to advance rigor.

Three Phases of Data Collection

I conducted three phases of data collection. Collecting data in this way allowed me to engage in iterative data collection and analysis (Bhattacharya, 2017) as each preceding phase informed the subsequent phase(s). I present a visual overview of the three phases of data collection in Figure 1. Next, I discuss data sources and methods within each phase.

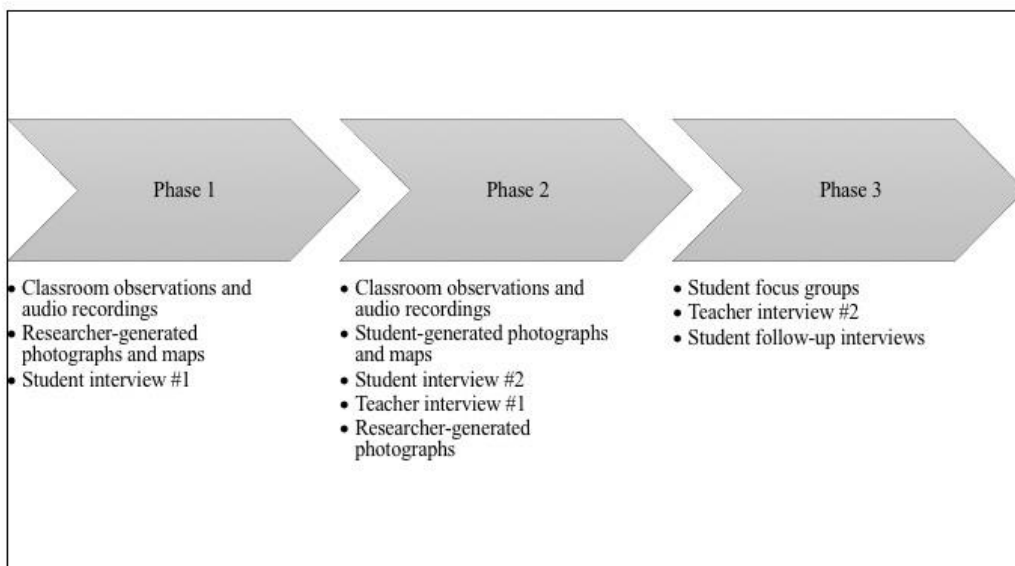


Figure 1. Research plan.

Data Sources and Collection

Combining textual (interviews, focus groups) and visual (photographs, maps) narratives provided a supportive structure for documenting the complex lives disabled girls of color shared with me. Data sources included: (a) 28 audio/video recorded classroom/learning space observations (at least 4 per student) of discursive practices, (b) 229 student-generated photographs, (c) 7 student-generated maps, (d) 64 researcher-generated photographs (44 from the 9 learning spaces the girls were assigned to as well as 20 from spaces they were not), (e) 25 researcher-generated maps and 2 published school maps, (f) 14 student interviews, (g) 2 student focus groups (1 at each school), and (h) 10 interviews with the girls' teachers (see Table 4).

Table 4

Data Sources Across Cases

	Meena	Emma-Mae	Jimena	Amy	Rosa	Tiffany
Observations and Audio/Video Recordings	5	5	4	5	5	4
Student-Generated Photographs	32	46	45	34	30	42
Student-Generated Maps	1	2	1	1	1	1
Researcher-Generated Photographs	11	11	11	10	10	11
Researcher-Generated Maps	5	5	4	3	3	5
School Maps	1	1	1	1	1	1
Student Interviews	3	2	2	3	2	2
Student Focus Groups	1	1	1	1	1	1
Teacher Interviews	2	2	2	2	2	2

In addition, I aligned the data sources with each research question. Then, I determined if each data source was a primary or secondary source according to each question. Please refer to Table 5 for alignment of data sources to research questions as each question was informed by multiple data sources. Because the students were the primary participants, their narratives during

interviews and focus groups were the primary data sources for the first research question.

Classroom observations and audio/video recordings of lessons were the primary data sources for the second research question. Secondary sources helped me contextualize the girls' experiences.

In the next sections, I describe the features of my data sources and tools.

Table 5

Primary and Secondary Data Sources by Research Question

Research Question	Data Sources				
	Observation field notes and audio/video recordings of lessons	Student-generated maps and photographs of materializations	Student interviews	Student focus groups	Teacher interviews
How are inclusionary and exclusionary schooling mechanisms generated through materializations?	S	S	P	P	S
How are inclusionary and exclusionary schooling mechanisms generated through discursive practices?	P		S	S	S

Note. *P* = primary data source, *S* = secondary data source.

Classroom observations and audio/video recordings – Phases 1 and 2. Discursive practices operate as sociocultural practices and tools that mediate relationships of power and privilege through interaction, knowledge, and meaning construction in society and therefore, are produced in schools (Foucault, 1972, 1982; Rogers, 2011). In order to record discursive practices in the classroom, I conducted at least two phases of observations per primary participant. I conducted an additional observation for both Emma-Mae's case and Meena's case in Ms. Taub's Language Arts block because Ms. Taub wanted me to see what she referred to as "literacy

rotations.” Observations (including field notes and audio/video recordings) lasted the duration of the class period or activity (25-70 minutes). Total observation minutes per student ranged from 136-222 minutes for a total of 28 observations. The observations took place in two different classrooms (special and/or general education) or during two different content areas if the student only attended one classroom. For example, I conducted observations for Rosa and Amy during their (a) Language Arts block and (b) community-based work experience trips.

Recordings. While conducting observations, I audio and/or video recorded the classroom discourse and wrote detailed field notes (discussed next). If the student was a visual communicator wherein she used visual cues, such as gestures and body language, pointed to a communication book, used facial expressions, and/or sign language, then I used video recording along with a backup audio recorder. I used video recordings for all observations in Meena’s and Jimena’s classrooms. I also used video recording for two of Emma-Mae’s observations in Ms. Taub’s classroom because Emma-Mae’s voice was quiet on the audio recorder. The recording device was placed close to the focal student but in a way that was not stigmatizing. For example, when Tiffany was sitting with only one peer in Art Forms class, I placed the recorder beside the table and as close as I could to pick up their conversations. I also asked Tiffany if where I had placed the recorder was acceptable. During some of the observations, my participation shifted from peripheral membership with minimal involvement to active membership wherein I participated in certain classroom activities (Bhattacharya, 2017; Green, 2014). I made these decisions based on contextual factors, such as the activities the girls were engaged in at the time or teacher preference. However, I felt most comfortable when I could shift in and out as participant observer and continue taking detailed field notes. During lessons in which I became

participant observer, I would listen or watch the recording immediately after the lesson and fill in additional observation notes from my experiences in the classroom.

Field notes. I wrote detailed field notes on an observation protocol (see Appendix I) of the discursive practices I observed, including teacher, student, and peer talk and actions as well as the texts used during the lesson. I had field-tested versions of this protocol in three classrooms prior to this project and adapted it again for this study's aims. Detailed field notes were imperative as the classroom looked and sounded different when the lesson was teacher-directed versus when students were working independently. I recorded these differences but was able to supplement the recording with what I witnessed as an observer. Originally, I had planned to observe collaborative group work. However, this rarely occurred in the observed classrooms.

Maps. When learning took place at school, I sketched a map of where the classroom was located in reference to other spaces in the school and a diagram or map of the classroom layout. I included where furniture was situated as well as where learning tools and texts were stored. I did this for the first observations only unless the classroom layout had changed. This initially resulted in two maps per student per learning space or four maps for Emma-Mae, Meena, Jimena, and Tiffany (e.g., two maps in PE and two maps in Ms. Taub's class for a total of four maps for Emma-Mae). When Amy and Rosa were at the arcade, I drew one map of the arcade and where the girls went during their time there. This resulted in only three maps for Amy and Rosa. Three classroom layouts changed over the course of the project, resulting in three more maps of classroom layouts for Emma-Mae, Meena, and Tiffany. In all, I drew 25 maps.

Tools. Field notes also reflected the learning tools I saw the students and their teachers use as well as the tools present in the classroom that were not used. At times the purposes of the tools overlapped, meaning tools were used for learning and teaching and students and teachers

accessed them. Other times, there was an apparent separation when only the teacher had access to the tool (e.g., document projector, desktop computer). I noted these discrepancies in my field notes. Learning tools (pencils, markers, dry erase boards, laptops) varied across learning spaces.

Conducting cycles of observations within each case afforded iterative data collection and analysis as I collected observation data, analyzed for emerging themes, turned my hunches into questions, and returned for another observation with new questions (Bhattacharya, 2017). For example, after my first observation of Jimena's choir class, I was particularly interested in why Jimena arrived at choir late each day and what she was missing when she was not there. I arrived extra early for my second observation of Jimena's choir class to learn more about the morning breakfast schedule Jimena participated in and to observe Jimena's choir class before she arrived. In these ways, classroom observations supported an examination of how power was maintained (Annamma et al., 2013) through the interactional and contextualized process of learning facilitated by material and conceptual artifacts (Rogoff, 2003), as discussed in chapter one. Thus, observations upheld my commitments to my theoretical framing (Annamma et al., 2013; Lave & Wenger, 1991; Lewis et al., 2007; Rogoff, 2003; Shweder, 1990; Vygotsky, 1978). I used field notes of classroom layouts and learning tools to answer the first research question and field notes and audio/video recordings of discursive practices to answer the second research question.

Photographs and maps of materializations – Phases 1 and 2. My decision to use photography and cartography to illuminate materializations was informed by methodological moves scholars have made before me, including when examining schooling mechanisms through discourse and space (Caetano, 2014; Gabel et al., 2013), photovoice projects with disabled girls of color in Vietnam (de Lange et al., 2016; Nguyen, 2016), photovoice research with youth investigating space and place (Burke et al., 2016; Davison et al., 2011; Wilson et al., 2007), and

qualitative inquiries incorporating mapping (Annamma, 2014, 2016, 2018b; Krueger-Henney, 2015; Sirin & Fine, 2007, 2008). This decision was also informed by scholarship using visual methods to disrupt traditional power dynamics between researcher and participant (Giesecking, 2013; Harper, 1998; Leavy, 2009; Margolis & Pauwels, 2011).

Photo-elicitation and photovoice. Cumulatively, the students generated 229 photographs. As I employed diverse visual methods, I intentionally used photo-elicitation coupled with photovoice wherein the girls took their own pictures instead of using photo-elicitation solely with researcher-generated photographs (Clark, 1999). Photovoice ensures the participants take and make meaning of their own photography (Wang & Burris, 1997). Thus, photovoice afforded the girls the opportunity to gather data through photography based on the prompt or concern (Clark-Ibáñez, 2004; Wang, 2006). Combining photovoice and photo-elicitation had numerous benefits. For instance, incorporating photographs lessened the over-reliance on dialogue most often present in interviewing (Byrne & Doyle, 2004). In addition, by providing a talking piece that the participant had created, photo-elicitation (Lapenta, 2011; Schwartz, 1989), as an interviewing technique within photovoice, provoked meaning-making and dialoguing of experiences that may have remained dormant in face-to-face interviews and focus groups (Clark-Ibáñez, 2004). For example, one girl's photograph of a water fountain generated group conversation about spatial relationships and materializations that were not discussed in student interviews. Using photography with critical and participatory axiological commitments (Tuck & McKenzie, 2015) embodied the potential for honoring multiple ways of knowing, co-constructing knowledge with participants, and consciousness-raising (Osei-Kofi, 2013).

Map-making. In this project, student participants were invited to draw a map, resulting in six student-generated maps. Cartography, or map-making, is a deeply personal as well as social

and spatial activity (Futch & Fine, 2014). Cartography represents what we think and how we see the world (Giesecking, 2013). For youth, map-making occurs in the mind throughout the day but also in school on paper, on the playground, and in the cafeteria. Moreover, map-making can occur in the presence of others, including classmates and friends. However, space is often not considered when we think about the ways it impacts our identities and school contexts. I adapted Education Journey Mapping techniques (Annamma, 2016, 2017, 2018b), which were adapted from identity-mapping techniques (Sirin & Fine, 2008), to create a mapping activity in which each primary participant drew a map of a classroom she spent time in or how she saw the whole school. Asking the students to map upheld my theoretical commitments to DisCrit (Annamma et al., 2013), my ontological commitments to critical spatial inquiry (Tuck & McKenzie, 2015), and my axiological commitments to the girls as knowledge holders and generators (Delgado Bernal, 2002; Paris & Winn, 2014b). Cartography provided a chance to generate new understandings about school geographies from the girls' perspectives (Annamma, 2016, 2017, 2018b).

Researcher-generated photographs – Phase 1. During the first phase of data collection and prior to the first student interviews, I took photographs (3-4 per learning space for a total of 44 photographs) of materializations I noticed while I was conducting the first round of observations. For example, I took photographs of classroom layouts that seemed particularly engaging to the primary participant when I was conducting observations. I took photographs of learning tools I saw students use or ones that were in the classroom but not in use. I also took pictures of tools I saw the teachers use. The photographs of learning tools were not analyzed but were used as tools to initiate conversation and promote photographic literacy (described below) before the girls took their own pictures (Ewald & Lightfoot, 2001; Latz, 2017). I also used researcher-generated photographs during the first teacher interviews (described below).

Student-generated photographs – Phase 2. Disabled girls of color took photographs around the school of materializations during the second stage of data collection. I encouraged each participant to generate at least 30 photographs. Rosa took the fewest photographs at 30 and Emma-Mae took the most at 46 pictures. I chose 30 as the goal because I had planned to use disposable cameras and a roll of film is usually 27 photos. However, after testing two disposable cameras, I found them difficult to physically access. The shutter button was small in size and the flash button was concealed and had to be held down for at least five seconds to load. Moreover, the film speed was too high for school lighting at 800 ISO (film speed). In fact, scholars have discussed some of the challenges in ensuring camera accessibility, including zoom and shutter control, viewfinder size, and icon clarity (Levin et al., 2007). Therefore, I asked each participant what camera she was most comfortable with (e.g., iPad, digital camera, disposable camera, phone) with time to try them out before she chose the one she would ultimately use. All the students chose the digital camera and/or iPad. Jimena, Amy, and Meena chose the iPad. Rosa and Tiffany chose the digital camera. Emma-Mae used the iPad and digital camera. Also, none of the participants wanted accommodations to operate the cameras. When Jimena's arms began to fatigue towards the end of the photo session from holding the camera up over time, I was her navigation/mobility support for a few minutes as she finished taking photos around the school.

Emma-Mae, Jimena, and Tiffany generated photographs over two sessions while the other three girls completed their pictures in one session. This was because of school schedules, my own timing, and I hoped each focal participant would take the amount of time she felt she needed to generate all her photographs. Tiffany opted to stay afterschool to take some of her photographs. Otherwise, all photography sessions occurred during the school day. Depending on each student's familiarity with her chosen camera, 10-15 minutes was dedicated to photographic

literacy (Ewald & Lightfoot, 2001) and the essential elements of operating a camera. Scholars have discussed how taking time to talk to youth about specific photos can build a student's photographic literacy (Ewald & Lightfoot, 2001; Latz, 2017). Photographic literacy supported the girls as they generated their own pictures because they had a chance to read a photo as they observed the details within the image and imagined the story behind it (Ewald & Lightfoot, 2001). I used 1-2 researcher-generated photographs from each girl's classroom to discuss photography fundamentals (framing, timing, and details; Latz, 2017) depending on her familiarity with photography. The purpose of photography essentials was not to impose my perceptions of what defines a great photo. Rather, discussing fundamentals concretized the notion that who we are, where we are, and how we are physically positioned (e.g., standing, sitting) impacts how we see the world (Ewald & Lightfoot, 2001; Latz, 2017). I had planned to spend more time with photographic literacy, but time was limited during school hours.

I accompanied each student as she took photographs of materializations with digital film as suggested by the teachers. As discussed, Ms. Randle required a paraprofessional accompany Jimena and me as she took her photographs because. In addition, I carried a project information sheet as a descriptive support in case someone asked her why she was taking pictures and what she planned to do with them (Latz, 2017; see Appendix J). I was also present to answer any queries, and this happened on occasion when an adult or student asked what we were doing.

The students' photographs focused on the spaces in the school where they enjoyed being physically, emotionally, academically, and socially as well as the learning tools in the school that they felt best held them as knowers and knowledge producers. In other words, what school geographies, classroom layouts, and learning tools worked best for her as a knower and doer? I provided open-ended prompts on a piece of paper that followed the theme of inclusionary and

exclusionary schooling mechanisms in which each girl could choose the question(s) or directive statement(s) that spoke best to her (Latz, 2017). Examples of prompts included: Where do you enjoy learning? Where do you feel your ideas are most valued? Describe where you learn best. What materials or tools help you learn best? What classroom materials or learning tools do you enjoy using? Describe how you learn best (see Appendix K). I carried the prompts during each girl's photography session to refer back to when as needed. The prompts were open-ended as there are many ways to decide what to photograph (Latz, 2017) and reinforced the phenomena of schooling mechanisms (Wang, 2006). Moreover, by offering prompts that included open-ended questions around a theme, I provided some structure while covering broad topics (Prins, 2010). Because this project was not completely participatory from start to finish or open-ended wherein we examined what the girls' greatest concerns and freedoms were, Wang (2006) acknowledged that posing themes for taking photos can be a useful technique when working with youth. These questions suggested the theme or phenomena of inclusionary and exclusionary schooling mechanisms while remaining open to each girl's unique experiences (Winn, 2011).

Although the students were taking pictures of school spaces, classroom layouts, and learning tools, it proved difficult to photograph materializations without identifying information (e.g., student names on name tags, school mascot on gym floor) in the photos, especially during school hours. I used masking (Strack, Magill, & McDonagh, 2004) and blurring (Mamary, McCright, & Roe, 2007) while a picture was still in a digital state, prior to development, to honor anonymity. Specifically, I used Skitch (2018) and Fotor (2017) for photo editing, careful to not modify the photograph but use masking and blurring to maintain confidentiality.

After every photography session, I used a professional photo processing company to develop each girl's photographs as 4" x 6" prints. Then, I put the photos in an album in the order

the photos were taken prior to most of the second interviews. During Emma-Mae's and Tiffany's second interviews, we put the photographs in the albums together. This way, all their photos were in one place. As mentioned, each student took as few as 30 and as many as 46 digital photographs. The data yield for 6 student participants was 229 photographs (see Table 4). Not all the photos were discussed in the interviews and focused groups (described below) and therefore, participants did not analyze all the photographs. Student-generated and -selected photographs and maps (process described below) were secondary sources used to answer the research question: How are inclusionary and exclusionary schooling mechanisms generated through materializations for girls of color with intellectual and developmental disabilities?

Researcher-generated photographs – Phase 2. After developing each student's photographs and conducting the first and second interviews, I took another round of pictures (12 at the high school and 8 at the middle school) later in the second phase to discuss in the focus groups (described later). In this study, there were general education classroom assignments and learning tools, such as Bunsen burners, beakers, and electronic devices, that the girls did not have access to and therefore did not photograph. However, peers without disability labels accessed those spaces and tools. I asked about materializations the participants did not photograph in the focus groups and follow-up conversations (discussed later) as Harper (2002) explained, what was absent from the photographs was as important as what was present.

Phenomenological interviews with students – Phases 1 and 2. Using Seidman's (2013) phenomenological interview sequence, I focused on the meaning and essence of their lived experiences as discussed by the focal participants (Bhattacharya, 2017; Van Maanen, 2018) to contextualize the girls' experiences. I conducted interviews at preferred locations and times. All interviews occurred at school during the school day except for the second part of Amy's first

interview and Amy's second interview. I primarily used open-ended questions and I restated questions and scaffolded open-ended questions as a support when necessary (Gibson, 2012). At the time of this project, the school district did not hold the girls' communication styles as strengths and gifts. For example, the school district was not providing Amy, Jimena, and Meena with the desired communication supports as stated by the girls and their families. Therefore, I iteratively created communication supports based on the girls' strengths and gifts as identified by the girls, my own observations, suggestions from their teachers and families, and previous scholarship (Cameron & Murphy, 2002; C. Mitchell et al., 2016; W. Mitchell, 2010; Rabiee et al., 2005; Teachman & Gibson, 2013). I describe the supports and details for each interview next.

I developed a modified version of Seidman's (2013) phenomenological interview sequence supported by visual methods (photography and cartography) for the student interviews. According to Seidman (2013), modifications to the interview sequence are acceptable as long as I allowed "participants to reconstruct and reflect upon their experience within the context of their lives" (p. 21). Each student participated in two interviews and initially the data yield for 6 student participants was 12 interviews (lasting 23-75 minutes). Amy and Meena also participated in follow-up interviews (lasting 28-56 minutes) for a total of 14 interviews (see Table 4).

Interview #1: Focused life history. The first interview was a focused life history interview with the primary participants (see Appendix L). This interview provided an opportunity for me to learn as much as I could about each student as she reconstructed her past experiences in school up to present day. During the discussion I asked open-ended questions such as – How was your elementary school experience? What was your middle school experience like? Tell me about your experiences in high school. By asking open-ended

questions, I provided an opportunity for each girl to reconstruct and describe a range of noteworthy educational events over the years (Seidman, 2013).

I did not use supplementary interviewing tools during Rosa and Tiffany's focused life history interviews. Also, their first interviews were completed in one session. The focused life history interviews took place over two sessions for three girls – Emma-Mae, Amy, and Meena. As mentioned, Emma-Mae's first interview took place over two sessions because she seemed anxious and after asking her, she told me she wanted to go back to class. Amy's and Meena's first interviews took place over two sessions because I needed to learn more about their communication strategies and adapt the tool kits accordingly.

I used varied communication supports for Amy's, Meena's, and Jimena's focused life history interviews. After realizing that I was not familiar enough with Amy's communication styles or modes to know everything she was telling me, I invited Amy's mother, as a communication partner, to a follow-up interview to Interview #1 (Erevelles & Mutua, 2005). The follow-up interview allowed me to learn more about Amy's elementary and middle school experiences. I had originally conceptualized it as an opportunity for Amy to talk to me about school and for her mom to support the conversation as necessary. However, I failed at facilitating this and while I did learn about Amy's elementary and middle school experiences, the experiences often came from her mother's lens. I would eventually find the right supports for the focus group and Amy's third interview (discussed later).

Meena's focused life history interview concentrated on her current schooling experiences as she had not been to school prior to immigrating to the U.S. and attending Bessie Smith Middle School. While Meena had a communication device in her homeroom class, neither teacher was consistently facilitating its use. Ms. Taub encouraged me to use Meena's YES/NO card from the

classroom for her first interview. The YES/NO card supported Meena's multiple communication means (e.g., facial expressions, head movements, gestures). However, after conducting the first interview, I opted to spend more time in the classroom to learn about Meena's communication styles and then asked follow-up questions for the focused life history interview. Similar to Amy, I would eventually find the best combination of conversation supports for interviews with Meena (discussed later) considering the time and resource constraints associated with this study.

I chose to use Talking Mats (Cameron & Murphy, 2002; W. Mitchell, 2010; Rabiee et al., 2005) during Jimena's first interview because of her familiarity with Boardmaker (2019) symbols as Ms. Randle (and later her mother) informed me Jimena had used a voice-output communication device in the past. The Talking Mats were helpful and supported Jimena's multiple communication modes (e.g., natural speech, vocalizations, head movements, gestures). Most of Jimena's interview focused on her four years of high school and current postsecondary experiences. Jimena's mom discussed her daughter's elementary and middle school experiences with me briefly while reviewing the demographic form (discussed earlier). The students' focused life history interviews were audio/video recorded and lasted between 23-75 minutes.

Interview #2: Details of the current experience and meaning-making of materializations. The second student interview was a modified version of Seidman's (2013) details of the education experience interview. Student-generated photographs were the catalyst for this interview (see Appendix M). I culled from photovoice methods by using photo-elicitation, resembling the narration phase within photovoice (Latz, 2017). I asked each participant, with as many as 10 student-selected photographs, to tell me about the spaces and learning tools she photographed and why. I asked open-ended questions, such as – What did you take a picture of? Why? What does it mean to you? Wang and Burris (1997) referred to this

process of asking the participant about her photos as contextualizing. If time allotted, I asked questions or talked with the focal participant about other photographs she had generated but hadn't chosen to discuss. The second interview also afforded an opportunity for me to inquire and check hunches that had emerged during my observations of classroom discursive practices and materializations.

Map-making. After each focal participant finished contextualizing her photos, I invited her to draw a map of a classroom space(s) she currently spent time in or a map of how she saw the whole school. As discussed, mapping is a personal, social, and spatial activity (Futch & Fine, 2014) that represents what we think and how we see the world (Giesecking, 2013). With this in mind, asking the girls to map a school space of choice afforded access to profound and nuanced ways girl saw and experienced her school academically and socially. The prompt (modified from Annamma 2013, 2018a) was written down, read aloud, and discussed with each participant as many times as she wanted:

Map a school space of your choice. It can be as small as a classroom or as big as the whole school. Include people, materials, difficulties, and opportunities within that space. You can use different colors to show different feelings. You can use symbols, like lines and arrows. You can create a flowchart. You can use words. Be as creative as you'd like. Afterwards, you will get a chance to explain it to me.

While each participant engaged in map-making, I also mapped a classroom space or the broader school geography because I thought it was more natural for us both to draw and I offered to explain my map first. I brought large drawing paper (heavier and more textured than sketch paper), pens, pencils, color pencils, and markers. I also brought Math manipulatives and a computer in case a participant opted to draw a map with other cartographer tools. Emma-Mae drew two maps, one on each side of the paper. Jimena opted to create a mobile map or navigation tour on video. She directed the navigation tour while I video recorded from behind and next to

her wheelchair. Afterwards, we watched and listened to the video and discussed her map. Through cartography, the girls and I talked about what worked and what did not work for them across the school day as conceptualized within and projected from their maps (7 total maps).

The second interviews lasted between 33-70 minutes and were audio/video recorded. The second interview was divided into two shorter interviews for Rosa given the large amount of time needed. Amy's second interview took place at her home and her mom offered to be a communication support to me. Low-tech communication boards (with yes, no, more, less, I don't know, sometimes) were available as a support for Jimena's and Meena's second interview. The photographs and maps were the central talking pieces for the details of the experience interview. Jimena and Meena would often point to the focal object in the photograph and this gesture would initiate the conversation. Fourteen interviews with girls of color with intellectual and developmental disabilities were primary data sources for the first research question and secondary data sources for the second research question (refer to Table 5).

Focus groups with students: Reflection on the meaning – Phase 3. I modified Seidman's (2013) third interview and constructed a collective experience through focus groups (see Appendix N). Informed by Sirin and Fine's (2008) gallery walk of identity maps and Annamma's Cartographer's Clinic (2013, 2014, 2016, 2018a), each focus group followed the individual experience of contextualizing (Seidman, 2013) and afforded an opportunity to learn from the student photographers as a collective. The focus group, or Photographer's Symposium, had two benefits. First, collaborative reflections on the meaning through a focus group structure created an opportunity for the girls to discuss their school experiences and photographs as a collective (Pérez Huber, 2009). Second, focal participants identified themes and outliers (Wang,

2006) as they discussed their photos and school experiences as a group (photovoice ideation phase).

The Photographer's Symposium began with *noticing* wherein the girls looked back through their own photo albums and then noticed within one another's. This gave everyone a chance to familiarize themselves with their individual and collective lenses. Similarities and differences arose as the girls causally explored the albums and discussed what they noticed. For example, Emma-Mae found similarities between her photos and another participant's as they had both photographed basketballs as learning tools. This coordinated another noticing wherein each photographer in the Bessie Smith focus group had a picture of the gym. Then, each participant chose five pictures they wanted to emphasize while their albums stood ready for additional connections spurred by collective remembering and analysis. After selecting five photographs each, we had a short gallery walk (Sirin & Fine, 2008) of everyone's photographs. Then, I opened the dialogue by encouraging the girls to ask me questions about two pictures I had taken.

After setting the stage with these steps, I culled from photovoice methodologies (Wang & Burris, 1997) and asked the girls to talk about their photographs. Here, the students contextualized together. Then, they codified themes and outliers as a group (referred to by the acronym SHOWeD): What do you See here? What is really Happening here? How does this relate to yOur lives? Why does this problem or asset exist? What can we Do about it? (Wang, 2006). These questions were posted around the Photographer's Symposium and we returned to them as needed to guide the conversation. In this way, the Photographer's Symposium was an opportunity for data collection and analysis (Annamma, 2014, 2016, 2018a) across cases.

The focus group was also a chance to continue ongoing member checks with the girls (Rodwell, 1998) as the information gathered from the first and second interviews iteratively

informed additional follow-up questions I brought to the focus groups. For example, I asked questions about materializations that I did not see in student photographs or in learning spaces by using photographs of materializations I took in the library as well as in Science, Math, and Language Arts general education classes. Focus groups were a primary data source for the first research question and a secondary data source for the second research question (see Table 5).

Focus groups took place at school and were audio and video recorded. The focus group at Bessie Smith Middle School lasted 24 minutes and the focus group at Frida Kahlo High School lasted 66 minutes over 2 sessions (see Table 4). Significantly less time was afforded to the middle school focus group due to spontaneous schedule changes. At the high school, Jimena was absent from the first focus group session and Tiffany was absent from the second focus group session. Therefore, I asked Tiffany and Jimena follow-up queries at another time. These were short conversations wherein I took detailed field notes.

Follow-up interviews and conversations – Phase 3. I conducted two follow-up interviews after the Photographer's Symposiums, one with Amy (28 minutes) and one with Meena (56 minutes). By this time, I was more familiar with each girl's communication styles and incorporated communication supports. For example, I used modified versions of the Talking Mats (Cameron & Murphy, 2002; W. Mitchell, 2010; Rabiee et al., 2005) I had created for Jimena's second interview for each of the girls. In addition, I asked Meena's parents if they were comfortable with Paida accompanying me via Zoom (2018) to Meena's third interview and they agreed. The layered coordination of supports coupled with researcher-participant familiarity seemed to be a beneficial combination for the interview. In addition to the follow-up interviews, I had short follow-up conversations for member checking with Jimena and Tiffany.

Photovoice exhibition. During focus group conversations, the high school girls showed interest in displaying their photography publicly in a photovoice exhibit. Each interested disabled girl of color chose between 6-7 photographs to display and the messages they wanted to share or not through image captions, resulting in 34 publicly displayed photographs. Focal participant interpretation of the photography was central even though not all photographs had captions (Dr. Amanda O. Latz, personal communication, May 7, 2019). The participants chose to display their photographs at the school for three days with a gallery opening event the first evening for invited guests. The photovoice exhibition was not part of data collection or analysis.

Phenomenological interviews with teachers – Phases 2 and 3. Although the teachers were not the primary participants in this study, teacher interviews contextualized what I witnessed in observations and added triangulation to student data. Furthermore, teacher interviews provided an opportunity to partner with the teachers to discuss how inclusionary and exclusionary schooling mechanisms were generated through materializations and discursive practices. This information was vital to teachers and schools seeking to transform pedagogical practices (hooks, 1994) and schooling mechanisms. Materializations and discursive practices gave teachers tangible and practical aspects of their practice to reflect on and change. Using a modified version of the phenomenological interview sequence afforded teachers an opportunity to have access to data sources and engage in reflective praxis (Freire, 2000; hooks, 1994). Hence, I emphasized the second two interviews in the sequence – details of the experience and reflection on the meaning. The data yield for 5 teacher participants was 10 interviews (Table 4).

Interview #1: Details of the experience. The first interview focused on the concrete details (Seidman, 2013) of the secondary participants' teaching experiences with materializations and briefly around discursive practices. I incorporated digitized maps of classroom layouts

drawn during classroom observations and anonymized photographs (my own and student-generated) of learning tools in conjunction with a semi-structured interview guide (Appendix O). Teachers spoke to why they chose classroom layouts and how they incorporated learning tools. Teachers also discussed their relationships with students and their learning and teaching goals. In addition, I asked questions about patterns that had emerged from the first phase of data collection (Bhattacharya, 2017). For example, my field notes revealed Emma-Mae's squad line in PE consisted primarily of students from the special education classroom and so I asked Ms. Summitt about it. I found out that everyone assigned to that special education classroom, Emma-Mae included, attended Electives classes with all 8th Graders. The Electives classes not mixed grades as I had originally thought. Some teachers set an instructional goal related to generating inclusionary schooling mechanisms through materializations and/or discursive practices at the close of the interview. These 5 interviews were conducted in-person and lasted 51-75 minutes.

Interview #2: Reflection on the meaning. The second teacher interview was reflection on the meaning (Seidman, 2013) and focused primarily on how discursive practices within teacher classrooms and materializations within the larger school context constructed students as knowledge generators (see Appendix P). I incorporated select transcripts from subsequent audio/video recorded observations to discuss teacher and student talk, texts, and actions. I also used the school-generated maps as a catalyst for conversation focused on the broader school geographies. I asked additional follow-up questions based on any hunches or questions that had emerged from the first two phases of data collection. For example, I asked Ms. Randle about learning tools (e.g., iPad) Jimena told me she wanted to access. If teachers chose to set a goal during the first interview, then I followed-up on the goal progression during the second interview. The reflection on the meaning teacher interviews were conducted in-person or via

Zoom web meeting platform. I chose Zoom because I could share my screen (photographs, maps, transcripts) with the participant while still observing their reactions and body language. These 5 teacher interviews lasted 47-58 minutes and were secondary sources for both research questions. Moving on from data collection, I next discuss my data analysis plan, including inductive and deductive analysis as well as procedures for advancing rigor.

Three Cycles of Data Analysis

My data analytic plan was informed by my conceptual framing, research design, and understandings of the literature as well as by the research purpose and questions. Once all data had been collected, I continued iterative data analysis as I searched for patterns across the data (Erickson, 1986). I moved back and forth as I read the data, turned my hunches into questions or wrote down new questions, and returned to the data to look for patterns (Bhattacharya, 2017).

Following data analysis for a multiple case study (Merriam, 2001; Merriam & Tisdell, 2015), my data analytic plan consisted of three cycles: (a) within-case analysis, (b) across-case analysis, and (c) across-case thematic analysis (see Figure 2).

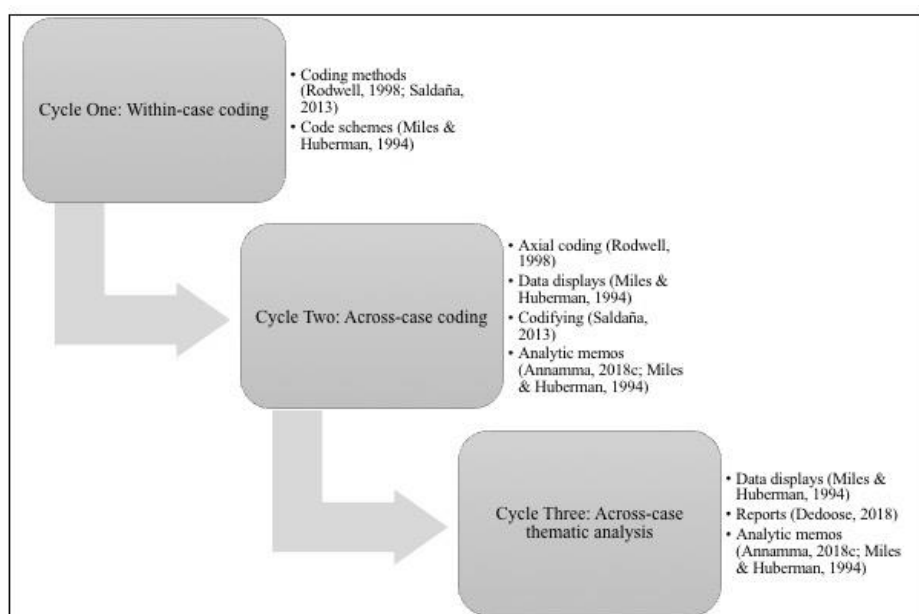


Figure 2. Data analytic plan.

Throughout the three cycles, I engaged in inductive and deductive data analysis as supported by my blended theoretical framing and my commitments to humanizing research (Paris & Winn, 2014a). I used different analytic methods as my first research question required narrative analysis of student interviews and focus groups and teacher interviews to contextualize the data (Miles & Huberman, 1994; Rodwell, 1998; Saldaña, 2013). The second research question required critical discourse analysis (Gee, 2011; R. H. Jones, 2014; Rogers, 2011) of discursive practices.

First Cycle: Within-Case Analysis

In the first cycle, I used inductive and deductive analysis for each research question. I mined the corpus of information for each case in inductive analysis (Erickson, 1986). During deductive analysis, I leaned on literature and my theoretical framing (Ravitch & Riggan, 2012).

Narrative analysis. During the first cycle of analysis, I used narrative analysis to make meaning of the stories the girls told me about themselves and the materializations they photographed and mapped. Data sources for narrative analysis included: 14 student interviews and 2 focus groups, 10 teacher interviews, 6 visual memos of student-generated maps (1 per student), and 12 visual memos of researcher-generated classroom layouts (including 2 memos from the arcade). All student interviews and focus groups were transcribed by me. I used a third-party transcription service for the teacher interviews. I cleaned all teacher interviews after they were transcribed, adding words and phrases heard on the audio files but left out by the transcription service. In addition, I wrote visual memos with rich dynamic descriptions for the visual data of each student's map and the researcher-generated layouts and maps. Visual memos were used to generate language to accompany the images as well as to integrate the content and meaning of each classroom layout or map per case (Saldaña, 2013).

To answer the first question, I moved through three rounds of open coding, including unitizing, categorizing, and labeling (Rodwell, 1998) as I developed within-case codes. I stayed close to the data by using the words of the participants whenever possible to categorize and label (Charmaz, 2006). I also used multiple coding methods. For example, I started with Descriptive code categories which identified the topic of what was talked about and then In Vivo code categories as I used the girls' words to deepen my understanding of their experiences (Saldaña, 2013). I also used causation coding when teachers talked about the cause of a schooling mechanism and students discussed the outcome of the mechanism (Saldaña, 2013).

Then, I engaged in deductive analysis to align method to theory (Erickson, 2004). DisCrit (Annamma et al., 2013) allowed me to mine for solutions to inequities participants brought forth, as well as uphold what the girls deemed as inclusionary and exclusionary mechanisms. For example, focal participants cited solutions for texts they wanted access to and learning tools they wanted to use. In addition, deductive analysis exposed counter-narratives (Delgado, 1993; Delgado Bernal, 2002; Solórzano & Yosso, 2001) and creative forms of resistance.

Next, I created a code scheme with categories, labels, and leveled codes. Two more rounds of within-case coding moving through the data inductively and deductively allowed me to review, refine, and examine the emerging relationships between categories and update the code scheme of each case accordingly (Rodwell, 1998; Saldaña, 2013). I also used data displays (Miles & Huberman, 1994) while I moved through these latter rounds of within-case coding. It was helpful for me as a visual learner working with students' narratives of their visual data to "write around [the] data" and visualize my understandings (Bhattacharya, 2017, p. 156). For example, I used cognitive mapping (Miles & Huberman, 1994) to visualize how each girl was represented in decision-making at school, recognized in pedagogy, and afforded learning and

social opportunities (Fraser, 1997; Waitoller & Kozleski, 2013) through materializations as well as her solutions when she was not (hooks, 2000, 2015). Moreover, data displays supported searching for disconfirming evidence within cases.

Critical discourse analysis. During the first cycle of analysis, I used critical discourse analysis (Gee, 2011; R. H. Jones, 2014; Rogers, 2011) to analyze discursive practices within each case to develop within-case codes. Data sources for critical discourse analysis included: 28 audio/video recordings and 28 field notes. First, I turned the audio/video recordings into content logs of key incidents of inclusionary and exclusionary schooling mechanisms within participation structures. Then, I transcribed those critical moments as an entry point to data analysis of discursive practices. I listened for pauses, truncated or interrupted speech, tonal marks, and laughter (Ochs, 1979). I used information from my field notes and video recordings to add gestures and actions to the transcriptions (Gee, 2011; R. H. Jones, 2014), particularly for girls who were visual communicators. Then, I organized the discursive practices by lines based on speaker intonation, action, and interruption and then lines into stanzas (Gee, 2011). Afterwards, I noted turn-taking, decision-making, opening and closing turns, and making contributions as they related to who was exercising power in and over discourse in the classroom and how schooling mechanisms were animated through discursive practices (Wodak, 2014).

Once a content log was complete, data analysis was deductive wherein I focused on how talk was structured, texts were used within the lesson, and the roles of verbal and nonverbal actions. In these ways, I identified patterns in the data based on the literature (e.g., IRE sequences; Cazden, 2001; teacher talk in special education classrooms; Pennington & Courtade, 2015; student repositioning; Annamma, 2018b; K. M. Collins, 2011a) and my theoretical framing. For instance, *IRE Sequence* was a deductive code category within all cases.

Then, with DisCrit (Annamma et al., 2013) and sociocultural theory (Lave & Wenger, 1991; Lewis et al., 2007; Rogoff, 2003; Shweder, 1990; Vygotsky, 1978) as a blended ballast, I specifically examined multiple oppressions (racism, ableism, sexism) the students faced while open to oppressions (linguicism) that arose from the data. For example, this theoretical framing exposed layered dimensions of linguicism (Phillipson & Skutnabb-Kangas, 1996) as people, systems, and processes failed to recognize and embrace the girls' bilingualism (e.g., home language) as gifts (P. H. Collins, 2013; Delgado Bernal, 1998). Moreover, as discussed above, people, systems, and processes neglected to appreciate the girls' layered multilingualism (e.g., code meshing, self-taught sign language(s), actions, vocalizations, gestures, facial expressions) as a strength (Mindel & John, 2018; Young, 2010). In sum, a deductive intersectional analysis (Annamma et al., 2013; P. H. Collins, 2015) informed the iterative within-case code schemes.

Next, I used inductive analysis, open to ideas that emerged from the data not yet represented in the literature (Erickson, 1986). For example, within Meena's case, teachers would talk about Meena to her peers while Meena was present. *Teacher Talk and Action Around Meena* emerged during within-case coding as an inductive category. I used this analytic process, first deductive and then inductive, within each case for the second research question.

Then, I created a code scheme or list of categories and definitions to help me visualize the analytic process and avoid duplication (Saldaña, 2013). I applied the deductive and inductive categories (emerging patterns/primary codes) and leveled codes (subcodes) within the code scheme across the discourse transcriptions within each case. I reviewed, refined, and examined the emerging relationships between categories and updated the code schemes through three rounds of within-case coding (Rodwell, 1998; Saldaña, 2013).

Second Cycle: Across-Case Analysis

After all data was coded within each case during the first cycle of analysis, I coded the data across cases by research question. During the second cycle, I engaged in cycles of inductive and then deductive analyses. In addition, I looked for disconfirming evidence across cases (Erickson, 1986). Through this process, I refined the code schemes as they pertained to each research question respectively.

Critical discourse analysis and narrative analysis. First, I conducted axial coding (Rodwell, 1998) by placing code categories across the six cases in relationship to one another. To do this, I created data displays to present the emerging patterns systematically in relationship across cases (Miles & Huberman, 1994). Data displays were useful in understanding complex contexts, dynamic flows of time and space, and relationships. Because I had a large corpus of information consisting of various sources and code schemes, I used data displays to compare and cluster the data. Clustering and comparing was helpful as I looked for similarities and differences across cases with a focus on materializations. To do so, I used a mixed strategy called stacking comparable cases (Miles & Huberman, 1994). I used checklist matrices to look for comparisons (Miles & Huberman, 1994) of discursive practices across cases.

During across-case analysis, I specifically looked for a sociospatial dialectic (Harvey, 2009; Lefebvre, 1991; Soja, 1980, 2010) by using a deductive approach. Because I combined the data across cases, I examined how the girls described the impact, if any, a sociospatial dialectic had on academic and social opportunities across the school day. By doing so, newly defined categories and leveled codes emerged. Moreover, I used deductive analysis to look at how intersecting systems of power and oppression (Crenshaw, 1993) impacted the experiences of disabled girls of color as well as how they repositioned in unique and creative ways (Delgado

Bernal, 2002; Davies & Harré, 1990). Similar to the cycle of inductive analysis, I used deductive analysis to mine for patterns and outliers as I looked across cases. Thus, deductive analysis informed the iterative across-case code scheme (Miles & Huberman, 1994).

Next, I used Dedoose (2018), a web-based structure for coding and analyzing data. I created one unified code scheme with defined categories and leveled codes (i.e., primary codes, subcodes) based on each research question and continued coding the data. I worked inductively and deductively, in a circular fashion, going back and forth to the data and my theoretical framework. I engaged in four rounds of coding across-case by applying and reapplying categories for the first research question and six rounds for the second research question, known as codifying (Saldaña, 2013). As I applied and reapplied the categories, I also recategorized, recoded, and refined categories and leveled codes (Rodwell, 1998; Saldaña, 2013). For example, the primary code of *Girls Engage in Discursive Repositioning Strategies and Their Teachers React* was refined with four subcodes. Across-case analysis afforded repeated readings to ensure that disconfirming evidence was deeply mined throughout the corpus (Erickson, 1986).

In addition, I used features within Dedoose (2018) that were relevant to the analysis. For example, I exported Dedoose (2018) code application reports to see the density of codes for instances of inclusionary and exclusionary schooling mechanisms and the girls' solutions. Lastly, it was helpful to use Dedoose (2018) code co-occurrence reports to see code overlap.

Third Cycle: Thematic Analysis

The final cycle of analysis focused on identifying and refining themes across cases after all data was coded and organized. As I worked with the corpus of information, I saw patterns in the data. These patterns helped me identify themes (Bhattacharya, 2017; Erickson, 2004). Themes were based on commonalities and variances across cases as well as how the identified

themes answered the research questions (Braun & Clarke, 2006). As I identified themes, I also refined themes by combining or separating them.

Trustworthiness

I used multiple strategies to support rigor (Bhattacharya, 2017) and trustworthiness of the findings (Lincoln & Guba, 1985). Next, I discuss these strategies, including triangulation, iterative data collection and analysis, reflexive journaling, analytic memos, and peer debriefing.

Triangulating. Triangulation improved the probability that my findings and interpretations were credible and trustworthy (Lincoln & Guba, 1985). In this study, I used data and methodological triangulation (Brantlinger et al., 2005). First, I collected data from more than one participant source, including students and teachers. Second, I used several data collection sources, including field notes and transcriptions of classroom discourse, interviews, focus groups, photographs, and maps. Using these different participant and data collection sources allowed me to look for patterns and outliers across sources and contexts.

Iteratively collecting and analyzing data. Iterative data collection and analysis supported trustworthiness of the findings (Lincoln & Guba, 1985). First, I used preliminary analysis of the first phase of observations and interviews to inform the second phase of interview questions and observations (Bhattacharya, 2017). Across the three phases of data collection, I modified student interview and focus group guides and teacher interview guides when necessary by including follow-up questions about hunches and assertions that arose from preliminary data analysis. This allowed me to move back and forth throughout the three cycles of data collection to ask questions to improve my understandings of the phenomena. In addition, iterative data analysis continued after data collection was complete. Here, I engaged in multiple rounds of

meaning making and coding within each case and then across cases by turning hunches into questions and returning back to the data to mine for answers (Bhattacharya, 2017).

Ongoing member checking. I conducted member checks to test working assertions as part of iterative data collection and analysis. When I thought I was understanding, I turned my hunches or assertions into questions and returned to the participants for clarification. In other words, I made guesses about patterns and then sought confirmation or disconfirmation from participants to extend what was known. For example, I saw Meena shake her left hand in the air after a writing lesson that lasted 42 minutes as observed in field notes. So, I asked her follow-up questions about writing. I also asked Ms. Taub about her writing goals. I brought questions to the participants to inform my understandings instead of waiting until all data has been collected to conduct one member check (Rodwell, 1998).

Reflexive journaling. Reflexive journaling supported trustworthiness as I used journaling to reveal my orientation towards inquiry and social action as well as to reflect on methodological decisions (Saldaña, 2013). For instance, I wrote in my research journal after each time I collected data (Lincoln & Guba, 1985). I reflected back on the classroom I observed or the interview I conducted to interrogate my own reactions, check working hypotheses, and generate novel ideas. Through journaling, I turned materializations and discursive practices back on myself to consider how my participation and positionality in the study contributed to the production or disruption of power and interlocking oppressions (Rogers et al., 2005). In sum, journaling was a way for me to understand myself and honor my axiological commitments.

Analytic memoing. I wrote analytic memos each month during data collection and then every six weeks during analysis. Analytic memoing offered different benefits which shifted over time. For example, I used analytic memos to link chunks of data (e.g., field notes, recorded

discourse, interview narratives) to extant literature (Annamma, 2018c). This afforded a chance to keep track of my ideas and hunches—what I was learning through the research process—during data collection, which cultivated rigor. During analysis, I used memoing to connect field notes to ideas about codes, link code relationships, and find gaps in the analysis (Miles & Huberman, 1994). In these ways, analytic memos focused on specific cases as well as data across cases to explore emerging themes in ways that coding did not allow for (Saldaña, 2013).

Peer debriefing. Peer debriefing supported trustworthiness (Lincoln & Guba, 1985). I met with two peers weekly during data collection and biweekly during analysis. Both peers were trained in qualitative research and discourse analysis. Peers discussed the research process with me from an outsider stance. Peers also recommended literature pertinent to the study. In combination with other measures of trustworthiness, these sessions helped to ensure that my findings answered the research questions.

Disconfirming evidence. Finally, I searched for disconfirming evidence across cases. This process was important to “combat confirmatory bias and to avoid an overly simplistic interpretation of the data” (Morrow, 2005, p. 260). By focusing on evidence that contradicted or was inconsistent with the emerging themes, I provided further support for the themes (Erickson, 1986). When I found disconfirming evidence, I labeled it as such on the note card or in Dedoose, depending on what cycle of analysis I was in. Finding disconfirming evidence supported trustworthiness of the findings (Erickson, 1986).

Conclusion

This qualitative multiple case study was situated within the critical and participatory paradigms (Denzin & Lincoln, 2011; Tuck & McKenzie, 2015). Data was collected and analyzed

iteratively over several months (see Appendix A for research timeline). In the next chapter, I present findings for six cases, organized by the two research questions.

Chapter 4: Findings

In this chapter, I present thematic findings by research question. For each thematic finding, I discuss the themes that connected across all six cases. Then, I discuss the themes that were distinctive to particular cases. The first section incorporates findings related to how inclusionary and exclusionary schooling mechanisms were generated through materializations (e.g., processes that result in school geographies, classroom layouts, learning tools). The second section includes findings related to how inclusionary and exclusionary schooling mechanisms were generated through discursive practices (e.g., talk, texts, actions) emphasizing classroom talk and actions between the girls and their teachers. The third section examines the crossroads of materializations and discursive practices focused specifically on texts and learning tools as well as augmentative and accessible communication technologies and supports. See Appendix Q for transcription conventions for interviews, focus groups, and classroom talk and actions.

Schooling Mechanisms Generated Through Materializations

The first set of findings pertain to the research question: *How are inclusionary and exclusionary schooling mechanisms generated through materializations (e.g., processes that result in school geographies, classroom layouts, learning tools) for girls of color with intellectual and developmental disabilities?*

Structures Within the Broader School Geographies: Limited Access and Subtle Freedoms

Across six cases, girls of color with intellectual and developmental disabilities visibilized the spaces in school they had access to via photographs, maps, and counter-narratives (Delgado, 1993; Delgado Bernal, 2002; Solórzano & Yosso, 2001), stories told from the margins. Moreover, the girls' photographs and maps were their analytic tools. They used these tools challenge the stories of those most powerful and speak back to deficit hegemonic narratives. In

doing so, they reimagined radical openness and ingenious school solutions (Annamma, 2018b; Annamma et al., 2013; hooks, 2000, 2015). In response to photovoice prompts about broader school geographies (e.g., Where do you enjoy learning? Where do you feel your ideas are most valued?) and the cartography prompt to map a school space of their choice, focal participants revealed components of the broader school geographies of the middle school and high school, which included main doors, hallways, and the structures within the hallways (e.g., wheelchair ramp, stairs, lockers). This mattered because disabled girls of color revealed that these every day and often overlooked school spaces held meaning.

High school front doors. Photographs at the high school revealed how focal participants entered school through the front door on a bus system separate from peers without self-contained special education classroom assignment who entered through the side door. Rosa, a Mexican¹⁰ 12th grader, photographed the front door (see Figure 3). Rosa stated,

We go up to the doors sometimes, to get on the bus. Sometimes we go to field trips, to get off from the door. Sometimes we, we see people walk through there. And sometimes we, um, we see cops. Cops around here. I watch the cameras around (the front doors), sometimes.

Rosa explained that other students went through the side door, but she had no relationship with them. (“Sometimes we, we see people walk through there”) the adult presence (e.g., police officers, surveillance cameras) that occurred at the front door where she and other students assigned to self-contained special education classrooms entered the school. Adult presence accompanied Rosa, Amy, and Jimena as they traversed to their assigned homeroom classrooms each morning. School personnel waited for the girls at the front doors and then escorted them to

¹⁰ Rosa and Tiffany racially identified as Mexican and Amy and Jimena ethnically identified as Hispanic (please refer to Table 2). When I refer to the girls as a collective, I use Latinas. All other racial identifications are based on the girls’ preferences.

class. Moreover, staff accompanied Amy, Jimena, and Rosa throughout the day, instead of the girls traveling on their own from class to class.



Figure 3. Rosa's photograph of the front doors.

Tiffany, a Mexican 12th grader, experienced more liberties at the high school during the morning than Rosa, Amy, and Jimena. Tiffany's homeroom was one of the two self-contained special education classrooms within the main school building. The teacher, Ms. Henson, stood at the front doors of the high school as Tiffany got off the bus or was dropped off by her mom. However, Tiffany many times went to homeroom on her own. It was unclear if she was defying the teacher expectations or engaging in flight, a strategy of resistance wherein a disabled girl of color "leaves a situation for a reason, whether or not it's against the rules" (Annamma, 2018b, p. 127). At the end of the day, Amy, Jimena, Rosa, and Tiffany went back to the front doors and left school 30 minutes before the final bell either on the separate school district bus system or picked up by family member(s). In sum, photographs, observations, and interviews illuminated how even the girls' entrance into school was segregated and surveilled, they were separated from

peers and met with varied forms of adult presence. Yet, disabled girls of color engaged creatively with the limited freedoms.

High school hallways. Pointing to her photograph of the hallway Amy, a Hispanic 11th grader explained, “This is where my class is.” Amy’s picture of the hallway symbolized the familiarity of the route; the students assigned to the self-contained special education classroom walked each day down the same hallway, although there were other routes to travel within the school. Then the class used the same bathroom each day and stood waiting for one another with chaperoning school staff. Amy’s photographs revealed the routinized path she traveled with the class to get to and from the school’s front doors to the self-contained special education classroom located in what the school staff referred to as “the annex.”

At the high school, Amy, Rosa, and Jimena traveled through the cafeteria regularly to reach their assigned homeroom classes located in the annex. Once in the cafeteria, as Jimena a Hispanic student in the school’s postsecondary program indicated in her map, a right turn before the lunch line would position a traveler to the appropriate hallway that led to the annex. The annex was a separate and physically smaller building located behind the main school building, difficult to see from the road. Also, the annex was not marked on the official school map or on building exterior. Amy, Rosa, and Jimena traveled through the main school building and back outside to arrive at their assigned, segregated special education classrooms. As Ms. Randle noted, “You can’t physically get any farther away from the front of the building than we are (in the annex). Obviously, we’re in a separate building, which is, I mean put special ed in a separate building.” In other words, the girls were physically segregated from the main school space.

Amy explained why she photographed the space between the school and the annex. She said, “It’s outside the door (to the classroom).” Amy’s photograph showed the outdoor corridor

framed with locked doors on both sides that she, Rosa, and Jimena traveled through each day to get to and from the special education academic assignment in the annex. Since the doors were locked, focal participants had to travel with adults who knew the key code any time they left the annex. The school would not share the key code with the students. The only way to gain reentry, unless someone inside saw them, would be from police officers at the front doors.

Despite adult presence and limited freedoms, the girls knew the areas of the school they traveled to well and in a focus group Rosa and Tiffany expressed concerns about the amount of people in the hallways at their school. Tiffany described the hallways as “a lot of people, a lot of students” and Rosa agreed. Tiffany added, “And they say no, everyone does not say excuse me when they bump you. The kids do not say excuse me... At lunch too. The line, there is a lot of people, and they don’t say excuse me at lunch either.” Ms. Randle and Mr. Clifford agreed with the girls that the school was overcrowded. Importantly, disabled girls of color took their point one step further and strategized solutions. Tiffany felt it was up to the school personnel to “teach manners to the students.” Rosa agreed and added “and no fighting.” Crowded hallways are cited concerns in large urban high schools (Tupper, Carson, Johnson, & Mangat, 2008). However, disabled girls of color were not accepting this as a given. Rather, they were more interested in generating thoughtful, caring, and doable solutions for their whole school generated from the margins and beneficial to everyone (Crenshaw, 1989; hooks, 2000, 2015).

High school wheelchair ramp. Jimena photographed the wheelchair ramp on the first floor (see Figure 4). Jimena was the only wheelchair user in the project. She explained,

ALM: I think you chose this one here, the wheelchair ramp?

Jimena: Yeah.

ALM: It’s important to you.

Jimena: Yeah.

ALM: Is this the only wheelchair ramp in the whole school?

Jimena: Yeah.

ALM: Inside the school?

Jimena: Yeah. [Nods her head YES.]

ALM: The wheelchair ramp is an important space. It promotes your learning and your access?

Jimena: Yeah.

ALM: Everything, being in the school.

Jimena: Yeah. [Nods her head YES.]



Figure 4. Jimena's photograph of the wheelchair ramp.

The wheelchair ramp gave Jimena physical access to the cafeteria as well as to her Choir class in the fall semester and later to her Ceramics class in the spring semester. It was an essential part of the route to the annex as well as delineated in her mobile map when she directed a left turn to the wheelchair ramp and up the ramp into the cafeteria. In these ways, the ramp symbolized access to varied learning opportunities across the first floor of the high school within the academic assignments Jimena chose to take – Choir and Ceramics.

High school stairs. Rosa and Amy photographed the stairs that connected the first floor to the cafeteria. Rosa explained,

Stairs, because we walk through the building up and down the stairs. And sometimes we, we just go. I mean, we walk through the stairs, up and down. We see, I see a bunch of people up there. And I like (seeing other people).

This set of stairs was a key component of Rosa's school route. She liked seeing her peers from across the school hanging out on the stairs. Although there were two other sets of stairs to the cafeteria and three flights of stairs to the second floor of the school, Rosa and Amy only caught this one set of stairs on film. Amy explained, "Mm, (the stairs on) the way to lunch. And (we) come out this front door." This set of stairs was the set of stairs the girls used most often when they traveled with their self-contained special education homeroom class from the front doors of the school to the cafeteria and out to the annex and back again. Their peers without disability labels moved freely about the school without adult escorts.

High school second floor and elevator. The high school had two floors and, as mentioned, none of the primary participants' academic assignments were on the second floor. Yet, an array of classes and the school library were on the second floor. Rosa talked about the upstairs when one of her first floor hallway pictures prompted another thought – collecting the recycling. Rosa said,

That (photo) reminds me of recycling, seeing a bunch of people around the hallway, teaching class... Half the class goes. All the good workers... Yeah, I like it. It was fun... Because you see a bunch of kids. They're real nice. They have respect. Not like rude people.

Rosa liked seeing and interacting with her peers on the second floor, but her experiences upstairs were not associated with general education academic assignments. After four years at the school, she had not been assigned to a class on the second floor. Instead, Rosa's remembering of the second floor evoked thoughts of socializing while collecting the recyclables from the classrooms. Rosa explained, "I want to go to regular classes, but I cannot do that." She continued, "So, it doesn't matter to me. I can be in the same class." In response to marginalizing and constraining

academic assignments, Rosa engaged in positivity, a strategy of resistance (Annamma, 2018b). Engaging in positivity meant that Rosa focused on what she wanted and liked and what she was going to achieve instead of what the school would not afford her.

Also, Rosa was receiving messages about what it meant to be a “good worker.” When Rosa and her classmates picked up the recycling while her peers were in academic classes, messages were sent about whose knowledge had power and in what ways. Engaging in positivity, Rosa embraced the sociality of the second floor and the opportunity to connect with other students. In fact, that was something she talked about that she liked at school, “people brand new in the class.” As Annamma (2018b) discussed, Rosa’s strategy of resistance was not simply a coping skill but also a mediational tool that changed or created situations wherein Rosa could get her needs met. In this case, her desire for spacious sociality.

I asked Mr. Clifford about the types of employment opportunities students from the self-contained special education classroom secured after graduation. He explained,

Some students typically will be maybe going to go work in the custodial field, or work in the gardening area... Or they have a work study thing in the day programs with a supported work setting at certain places... Other times, people may go to, say, help at a custodial or a bakery or whatever. We do some things with wiping down I think at some restaurants... Also, Walgreens hires some of our students to stock stuff, or sort stuff, or throw stuff away that's bad, or that kind of thing...

Mr. Clifford cited the custodial field and instead of focusing on job titles, he concentrated on what a person might do at a place of employment. Many of these actions involved trash or waste materials, including “wiping down,” “throw(ing) away stuff that’s bad,” and “sort(ing) stuff.” Rosa and Amy were picking up recycling around the school because this was one job Mr. Clifford envisioned for the girls’ futures.

In order to access the second floor, Jimena took the elevator. The elevator was locked and required a key from the front office or police officer to open. Jimena photographed the elevator.

However, she did not choose to talk about the elevator. Similar to the other high school participants, Jimena did not have any academic assignments on the second floor.

The second floor hallway also held the yearbook display. Looking at her photograph, Tiffany explained, “That's our last yearbooks, this thing too. We're seniors... I'm a senior now... 12th grade... We get our yearbooks, we're going to graduate.” While Tiffany did not photograph the hallways upstairs, she did take the most pictures of wall décor on the second floor, including the yearbook announcement and some other student-created signage. She explained,

ALM: Ok. Um. So, wait, before you close (the album), you took a few pictures upstairs, right?

Tiffany: Mm hm.

ALM: This one and the other... uh, the one that you were just telling me about.

Tiffany: Mm hm.

ALM: But you don't have any class up there, right?

Tiffany: No.

ALM: Not right now? Have you had class up there before?

Tiffany: Hm mm.

ALM: Would you like to have class up there?

Tiffany: Mm hm. Mm hm.

ALM: Yeah?

Tiffany: Yeah.

In this way, Tiffany's photograph also addressed how academic assignments were spatially segregated and that she wanted access to those. Over the course of the project, Tiffany shared how she wanted general education academic assignments for Language Arts, Mathematics, Chemistry, and Physics upstairs with juniors and seniors, her grade-level peers.

High school water fountains. Like the previously discussed photographs of school spaces, Amy's picture of the water fountains represented the limited areas of the school she accessed regularly (see Figure 5). Amy explained, “That's the water fountain. We see it at lunch.” Amy's water fountain picture illuminated the hallway students who were assigned to the

annex traveled within to get to and from the annex and back into the main school building. In these ways the main school building operated as a conduit rather than as a place of learning.



Figure 5. Amy's photograph of the water fountains and hallway.

Another water fountain photograph sparked an important conversation about how the high school girls reimagined (Annamma, 2018b; hooks 2000, 2015) the broader school geography and what needed to change. They explained how the water fountains were problems,

Rosa: A problem.

Amy: A problem.

ALM: How come?

Rosa: Because a bunch of people have to drink out of the same water fountain and there has to be more water fountains.

ALM: Oh. There are not enough water fountains?

Tiffany: Huh uh.

Rosa: There are not enough fountains.

ALM: Oh, I didn't know that. You also feel this way?

Amy: Yes.

Rosa: Yes.

In the focus group, the girls cited congested water fountain areas resulting in insufficient amounts of clean drinking water for the number of students at the school. Similar to the overcrowded hallways, the focal participants were not willing to admire a problem. In fact, they were already envisioning solutions for a safer, healthier, and more welcoming school geography.

High school lockers. The hallways of the high school and middle school were lined with lockers. I often saw students at their lockers during passing periods at both schools. However, Amy, Jimena, and Rosa did not have lockers. The classrooms in the annex were installed with coat hooks and by design made lockers seem superfluous. Tiffany also did not use a locker but instead carried all her school materials in her backpack with her wherever she went, including her coat. She did have a small locker in Ms. Mayer's Art classroom and expressed how much she liked that locker. Tiffany explained why they had lockers, "That's our lockers, we put our stuff in them. Mine's is right there. Right here... That's a nice classroom right here... We make room. We put our stuff in there and make more room." The first half of Tiffany's statement illustrated how lockers afforded her a sense of independence and the second half emphasized community.

Middle school front doors. Emma-Mae, a Black 6th grader, and Meena, a Middle Eastern 8th grader, also experienced forms of adult presence upon entering the school building. At Emma-Mae's and Meena's middle school, all the students entered the school through the front doors. Meena captured the metal detector on film. She said,

Meena: [Points to her picture of the front door and the metal detector.]

ALM: Yeah. The front door?

Meena: [Nods her head YES.]

ALM: Do you have to go through the metal detector?

Meena: [Shakes her head NO.]

While Meena did not have to go through the metal detector, a police officer or school staff member searched her backpack every morning. Ms. Summitt, the white female PE teacher,

explained, I “do bag check in the morning, greet the sixth graders as they come through metals... That’s interesting because you get to go through all of their personal belongings to find stuff.” The physical presence of metal detectors and actions of checking or scanning backpacks were common place across both schools and, as Ms. Summitt noted, situated some school staff in positions of power.

Once beyond this examination of personal belongings at the middle school, Emma-Mae and Meena traveled to their assigned homeroom classes on their own. At the middle school, this was deemed an indication of independence. Ms. Taub said,

...they (Emma-Mae and Meena) get to go through metal detectors and their lockers... completely independent just like any other middle school student. Which I think is important for them to have as much time interacting with and being beside their typically developing peers as possible.

Ms. Taub felt the morning passing time was a valuable time for the girls to spend with their peers. Aside from lunch and Electives classes (Emma-Mae in Theater and PE; Meena in Art and Theater) during the last two class periods, Emma-Mae’s and Meena’s academic assignments were in the self-contained special education classroom. However, Emma-Mae and Meena did not talk about this morning time as a social time with peers.

Middle school hallways. In Meena’s case, she took nine photographs of the hallways at the middle school. She chose to talk about two of the nine pictures in her interview,

Meena: [Points to a picture of the hallway.]

ALM: The hallway.

Meena: [Slight nod of her head. Turns the photo album page. Points to another picture of the hallway.]

ALM: Yeah, the hallway. People walking in the hallway.

Meena: [Smiles.] ((giggle°))

First, Meena pointed to the picture of the hallway outside the special education classroom heading towards the cafeteria (see Figure 6). Then, she pointed to the hallway leading to the gymnasium; originating from the same special education classroom.



Figure 6. Meena's photograph of the hallway.

While her morning path to the classroom was not routinized like it was for the high school girls, Meena's photographs revealed the starting point of her movements within the contours of the school typically began or ended at the special education classroom.

Middle school lockers. At the middle school, Emma-Mae and Meena were assigned lockers and they used them daily. Emma-Mae examined her photograph (see Figure 7) and explained, "That's my locker. I actually took one of my locker." Like Emma-Mae, Meena also photographed her locker. Meena said,

Meena: [Points to the locker that is hers.]
 ALM: That one. You like having a locker?
 Meena: [Nods her head YES.]

ALM: Yeah. You keep all your stuff in there?

Meena: [Points to her locker.]

ALM: Like your jacket and your backpack [Motions jacket and backpack with her hands.] are in here?

Meena: [Nods her head YES.]

Emma-Mae and Meena stored their backpacks and coats in their lockers.



Figure 7. Emma-Mae's photograph of her locker.

They would visit their lockers to store materials to go home when prompted by Ms. Taub and Ms. Snow. The girls' lockers symbolized nuanced freedom as a place to keep their own things. Thus, lockers were important spaces to the girls who were afforded access to them.

The photographs, maps, and counter-narratives of disabled girls of color revealed how access to school spaces was dictated by academic assignment and often occupied by adult presence. Specifically, their photographs, maps, and counter-narratives revealed how social processes interacted with the broader school geography (W. E. B. Du Bois, 1989; Soja 1980, 2010). In response, sociospatial exclusion met transformational resistance (Solórzano & Bernal,

2002; Solórzano & Yosso, 2001) and focal participants reimagined (Annamma, 2018b; hooks 2000, 2015) school geographies and shared what needed to change and/or what was most important. Reimagining was one way girls of color with intellectual and developmental disabilities could reclaim their educational trajectories when schools did not afford meaningful and rich academic and social opportunities to them.

School Cafeterias: Exercising Limited Freedoms and Suggesting Flexibility

In five cases, disabled girls of color discussed the significance of the school cafeteria to the development and care of their relationships with peers. Next, I discuss the cafeteria from the girls' perspectives, including how they resisted racial and ableist injustices within school spaces (Vélez & Solórzano, 2017) and cultivated their own inclusionary schooling mechanisms within the cafeteria (Annamma et al., 2013). I conclude with Emma-Mae's case, wherein she did not photograph or talk in depth about the importance of the cafeteria.

Case similarities. The cafeteria at Frida Kahlo High School was centrally located in the main school building. It was a common meeting place for students between passing periods and at lunch. All four high school girls took pictures of the cafeteria, including components of the layout or objects within the cafeteria. In addition, Rosa and Jimena both included the cafeteria in their maps. Rosa explained, "I talk to them only at lunch periods." Assignment in the self-contained special education classroom meant that Rosa did not see her friends during the school day aside from lunch. Although many students assigned to the self-contained special education classes would sit together, Rosa would leave her class and sit with her friends. She explained,

You can have fun with your friends in the cafeteria. You can talk to your girlfriends in the cafeteria. You can laugh in the cafeteria... So, me and my friends, we... We talk about different stuff, you know. And we sit together. And... what else do we do? Watching videos... on the phones.

This time in the cafeteria was critical to Rosa. She spent time with friends and engaged in different activities apart from only eating.

Tiffany shared a photograph of the cafeteria during the focus group and Rosa inquired about it. Tiffany responded, “I took a picture (of the cafeteria) because like uh, (it’s an) important part of, in our school thingy.” Similar to Rosa, Tiffany would separate herself from her class during lunch by standing to the side and talking with a friend when they were done eating. Tiffany and Rosa repositioned by sometimes moving away from the majority white special education staff to be with their friends during lunch time (Annamma et al., 2013). These purposeful moves made space between the girls and school personnel, some of whom the girls spent all or most of the day with.

The cafeteria symbolized nuanced moments of freedom for the girls. I claim nuanced freedoms because they could sit by whomever they wanted yet within particular parameters. If they were strategic, they could also talk about whatever they wanted with their friends as discussed in the focus group,

ALM: Do you get to sit by whoever you want?

Rosa: Yeah.

Amy: Yeah.

Tiffany: Mm hm. ((squeal sound°))

ALM: So, there’s a little bit of freedom in the cafeteria?

Rosa: Yeah. You can say whatever you want.

While some of the girls experienced subtle instances of autonomy (e.g., choosing where they sat or who they sat next to), others experienced adult presence in the cafeteria. Adults, including armed police officers, walked around the cafeteria monitoring students. Moreover, while Tiffany and Rosa resisted and separated themselves from their classes, Amy usually sat next to her best friend and the two always sat with Mr. Clifford, the paraprofessionals, and the other students assigned to that class. Amy explained through one of her photographs, “This is where my class is

(sitting). We can see the trophies. The library is right there.” Amy’s views of the trophies and the library on the second floor were routinized as the self-contained special education class always sat at the same tables even though the cafeteria was open seating.

Jimena took two photographs of the cafeteria. She explained that the cafeteria was significant “Because I get to eat. (See) Monica and friends.” The cafeteria was a key place to see friends and eat. Considering places to eat, the cafeteria was filled with tables with permanently-attached stools. Despite advertisement claims that the tables had “multiple points of entry,” (School Outfitters, 2019) there was no space for Jimena to sit along the length of the table (more than 40 feet) and still use the tabletop as a flat surface for her lunch tray. This limited the number of places where Jimena could sit and eat in the cafeteria and be with her friends. In addition, a special education staff member always accompanied Jimena at lunch. When Jimena’s friends wanted to sit with her, the staff member did not leave. However, when Jimena’s friends did sit with her, the students outnumbered the adults. While time in the cafeteria was regulated and space was minimized, Jimena held the cafeteria as a vital space for her school experiences. Despite adult presence, disabled girls of color found ways to connect with their friends at lunch.

Meena did not photograph the cafeteria but the sociospatial happenings were discussed during her interviews and in the focus group. In the cafeteria, the girls assigned to the self-contained special education classroom sat at one assigned table and the boys at another table. The food lines were also gendered wherein the girls got their lunches on the right side of the cafeteria and the boys on the left side. The restroom pass was small pink basket (for girls) and a blue basket (for boys) that sat on the table closest to the cafeteria entrance/exit. Even in the cafeteria, the students assigned to the special education classroom were not afforded opportunities to sit and socialize with peers from other classrooms.

In addition, few unregulated social opportunities existed while in the self-contained special education classroom as in Ms. Taub's words, "Which we have (social time) in (the peer partner program) but even that is so structured... It's also mostly teacher-led. Fridays is free-time (in the gym)." Thus, the cafeteria posed an important opportunity for Meena for unstructured and adult-free social time with girls from her class. Over time, I noticed Meena and the other girls pairing their multi-modal communication strategies with each other's. Meena was using gestures, facial expressions, objects, and her hands in combination with her classmates' gestures, facial expressions, use of objects, and talk. When I asked if she knew sign language, Meena explained through her translator,

Meena: [Nods her head YES.]

ALM: Would you like to learn more sign language to talk to your friends?

Painda and Meena speaking her home language.

Meena: [Nods her head YES.]

Said differently, the cafeteria had become a space for Meena to cultivate her sign language strengths and gifts with her peers, even though sign language was not being encouraged or used by adults in the classroom. In response to the lack of augmentative and accessible communication technologies Meena was afforded at school, she advocated that she did want to be learning and using more sign language. Despite the inadequate supports supplied by the school, disabled girls of color repositioned (Annamma, 2016; Davies & Harré, 1990; Wun, 2018) and took it upon themselves to develop multimodal communication strategies in the cafeteria wherein they were connecting with one another, cultivating friendships, and upholding each other as holders and generators of knowledge (Delgado Bernal, 2002).

Case difference. In addition to the broader school and the classroom, Emma-Mae experienced exclusionary mechanisms via adult presence and control in the cafeteria. First, Emma-Mae was assigned to the 8th grade lunch block as a 6th grader. Thus, she was the only 6th

grade girl in the entire cafeteria during that lunch period. Second, Emma-Mae was not allowed to sit with the other girls at the classroom-assigned table. On October 17, 2018, I ate lunch with Emma-Mae for the first time. As a punishment, Emma-Mae was required to sit by herself at an assigned seat at the end of the lunch table, closest to the cafeteria entrance/exit. According to Ms. Taub, “it was a disciplinary action” for not keeping her hands to herself. I am not certain the day the punishment started but on February 4, 2019, I sat with Emma-Mae at lunch and she was still required to sit by herself. Emma-Mae was hyper-punished via the longevity of the punishment (at least 3 ½ months). This hyper-punishment resulted in hyper-surveillance (Crenshaw et al., 2015; M. W. Morris, 2012) in the cafeteria. From her assigned seat, adults could watch Emma-Mae from all sides of the cafeteria (Dwyer & Jones, 2000), including from the stairs that rose above the cafeteria space (Foucault, 1977). These exclusionary, sociospatial mechanisms of hyper-surveillance and -punishment denied Emma-Mae opportunity to engage with peers (Wun, 2016a) during a potentially highly social time of the school day.

During the focus group, Emma-Mae agreed with the other girls that the cafeteria was an important space to talk and be with peers. However, she did not photograph it or talk about it in any of her interviews. Over two months had passed, and Ms. Taub had not checked in with Emma-Mae about the strict cafeteria seating boundaries. Ms. Taub said,

If Emma-Mae complained about being alone at lunch, I would address it... I think she would ask me, “When do I get to sit with my class again?” I think she is pretty comfortable with me. I think she would say, “How come I can’t (sit with my friends at lunch)?”

Ms. Taub assured that Emma-Mae would ask about sitting with her friends after being punished and denied the sociality of the cafeteria. In addition, Ms. Taub believed Emma-Mae liked sitting by herself. By assuming she would ask her teacher, Ms. Taub imagined Emma-Mae fissuring the

student-teacher power imbalance with her white female special education teachers and asking about the longevity and punitive nature of the punishment.

In response to these intersecting oppressions, Emma-Mae imagined a solution. When I asked Emma-Mae how she felt about sitting by herself in the cafeteria, her responses varied. Sometimes she would say that she liked sitting by herself. Other times, she would say that she wanted to sit with the other girls from her class at lunch. Thus, she spoke of flexible seating. By doing so, Emma-Mae ruptured the normativity that assigned tables held in this school's cafeteria space and reimagined the sociospatial processes (Annamma, 2018b; hooks, 2000, 2015) to be more flexible. Emma-Mae's solutions considered students' dynamic desires and needs at lunch as they themselves ebbed and flowed. Her solutions orbited to a more humanizing vision of schooling (Cammarota & Fine, 2008; Paris & Winn, 2014a).

Across six cases, disabled girls of color conceptualized the cafeteria as an important space for interactions with peers, including the development and care of friendships and intimate relationships. Thus, their conversations about the cafeteria invoked a powerful sense of how peers, as integral parts of life, could positively impact sociospatial processes at school (W. E. B. Du Bois, 1989; Soja, 1980, 2010). As a result, disabled girls of color cultivated their own inclusionary schooling mechanisms within the cafeteria space (Annamma et al., 2013). For some of the girls, time in the cafeteria was a chance to separate themselves from the adult presence they experienced across the school day. In Emma-Mae's case, she experienced segregation within a social space and therefore, was denied social opportunities.

Classroom Layouts: From Margin to Center

Across six cases, disabled girls of color discussed how they were or could be regarded as holders and creators of knowledge (Delgado Bernal, 2002) by how classrooms were designed.

To review, classroom layouts included the ways in which furniture (book shelves, tables, desks) was organized within the space, where and how students were positioned within that classroom (e.g., sitting, standing, center, periphery, teacher-designed, student input), and how these processes interacted and impacted the girls' academic and social opportunities. Next, I discuss what classroom layouts worked best from the girls' perspectives. I also weave in what the girls wanted to change as spatial exclusion (Armstrong, 2007; Erevelles, 2011a) met radical openness (hooks, 2000, 2015). Further, I use some of my own digitized maps of classroom layouts to trouble the ways disabled girls of color were physically, socially, and politically positioned within the layout.

In Meena's case, she took six photographs that included components of the classroom layout in the special education classroom and shared that sitting in the front helped her learn. For Meena, centering herself at the front of the classroom supported her as a learner. Yet in Theater, where Meena did not take any pictures, she was assigned a seat in the back of the classroom, last row of chairs. When I asked if she liked the current layout in the special education classroom in which student tables were situated in a U-shape she said,

Meena: [Shakes her head NO.]

ALM: Not really. You like this one better? [Points to the map of the collaborative groups with four students at each]?

Meena: [Shakes her head NO.]

While her seat was always close to the front of the room (where her teachers generally instructed from), Meena did not like either of the classroom layouts designed by her teachers. Meena generated a more inclusive solution. We discussed,

ALM: Do you want to sit by one of your friends? A girl maybe? What if it was like this? [Begins to draw a classroom layout with collaborative groups.] Here's you. And what if this was Rainbow? [Writes Rainbow's name on the classroom layout.]

Meena: [Nods her head YES. Smiles.]

ALM: Yeah. Like that? And Emma-Mae? [Writes Emma-Mae's name on the classroom layout.]

Meena: [Nods her head YES. Smiles.]

ALM: And here's Isabella? [Writes Isabella's name at the classroom layout.]

Meena: [Nods her head YES. Smiles.]

ALM: Yeah. You'd rather sit like this?

Meena: [Nods her head YES.]

ALM: With girls?

Meena: [Nods her head YES.]

Although Meena was supported with seat assignment in the front of the room, she always had to sit by boys. There were no girls at Meena's collaborative table of four in the fall. Then in the winter, she was assigned to sit by one white boy in the center of the U-shape. Ms. Taub described how the boy who sat by Meena was there to help her, "The goal of the layout was to separate people and pair people. (Peer) is a really good helper to Meena... In terms of pairing, we paired people intentionally in terms of personality and ability to sort of help." Always situating Meena next to a boy placed Ms. Taub's original purpose in direct conflict with Meena's comfort in the classroom. Further, Ms. Taub's intentions to find someone to help Meena positioned Meena as the recipient of help instead of holding Meena as a knowledge generator (Delgado Bernal, 2002), when she could have easily asked Meena where she would be most comfortable and productive. In response, Meena re-centered herself and imagined a classroom layout where she sat with those she felt most connected to – Black and Brown girls, her friends.

In Emma-Mae's case, she took one photograph of her desk in the self-contained special education classroom when she placed one of her favorite learning tools on it and took the picture. When discussing that specific photograph, she analyzed the learning tool and not the desk. Emma-Mae also included her desk in her map. During mapmaking she explained, "This is, this right here is my desk... My regular desk." In the self-contained special education classroom, Emma-Mae sat at a desk in the back of the room. She also sat at the front table with either the

teacher, depending the lesson and who was teaching. Emma-Mae said it helped her to move to the front of the classroom for learning activities. Contrastingly, her peers sat in collaborative arrangements in the center of the classroom (see Figure 8, the orange stars indicate Emma-Mae's two seating assignments within the self-contained special education classroom).

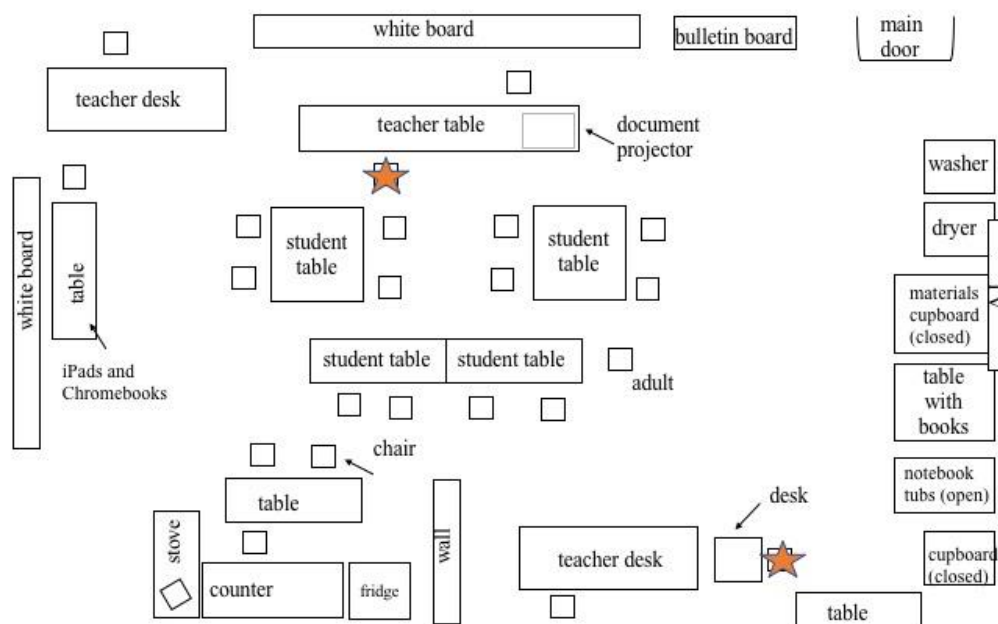


Figure 8. Special education classroom layout.

When I asked Emma-Mae if she wanted to sit with other students she replied, “No, I mean yes.” Perhaps Emma-Mae felt unsure about where she wanted to sit or wanted a more flexible arrangement (like in the cafeteria, previously discussed). Maybe she was employing a strategy of resistance (e.g., evasiveness) for a complex question (Annamma, 2018b) or needed self-exclusion at times to protect herself from oppressive schooling practices (Annamma et al., 2013). Irrespective of what she wanted, the choice was not completely Emma-Mae’s to make. Sometimes Ms. Taub would ask Emma-Mae if she wanted to come to the front, other times she told Emma-Mae where to sit. Also, I did not observe Ms. Snow ask Emma-Mae where she wanted to sit. That said, Emma-Mae’s assigned seat, the only desk in the special education class,

always remained on the margins. Paired with her assigned lunch seat, it was clear that as a Black disabled girl, Emma Mae was isolated in academic and social spaces in school.

Emma-Mae's sociospatial experience in PE was subtly different from the special education classroom. PE was one of Emma-Mae's preferred classes and she designated Ms. Summitt as her favorite teacher. She took four photographs of the gym floor. In PE, Emma-Mae's squad line (where she started and ended the class period) was on the edge of the gym, far from the center of the gym. During the main activities (e.g., dance, basketball), she moved throughout the gym space with the other students. In addition, Emma-Mae engaged in these activities but also floated in and out of participation. When I asked her about it, she said "Yeah," taking breaks helped her learn. When she opted out of an activity it was momentary. In fact, she might check in with Ms. Summitt and then resume the activity. In PE, Emma-Mae had access to all the PE tools her peers had access to and had more opportunities for spontaneous peer interactions than in the self-contained special education assignment.

In Jimena's case, she did not take a photograph of the special education classroom layout but said that sitting in the front sometimes helped her learning. In the special education classroom, Jimena sat in the back of the classroom. I asked Jimena if she could see the front screen from the table where she typically sat. She said,

Jimena: Yeah.

ALM: Or do you wish it was closer?

Jimena: [Nods her head YES.]

ALM: You wish it was closer?

Jimena: [Nods her head YES.]

Although Jimena could view the screen from her assigned table she wished the screen was closer. In addition, it was also important for school personnel to notice when they moved the laptop cart between Jimena's range of view and the front screen. I noticed this first when I was

volunteering in the classroom in August. It happened on occasion when the learning activity transitioned from individual to whole group work and the computer cart (with projector) was used. During interviews, teachers contextualized classroom layout design. Ms. Randle explained how she had “not sat down and spent an excessive amount of time thinking about the layout of the classroom” but that she “probably should.” For some teachers, it seemed as though the classroom layout did not hold the same considerations as other elements of learning.

In Choir class, Jimena sat closer to the front screen. See Figure 9, the orange star indicates where Jimena’s wheelchair was typically (in all three observations; two recorded and one unrecorded) positioned in the Choir classroom. Considering the design, the Choir room was constructed for/as a chorus with three bands of chairs on permanent risers and one small row of chairs on the main floor directly in front of the piano. There was no wheelchair ramp to access another part of the room aside the main floor.

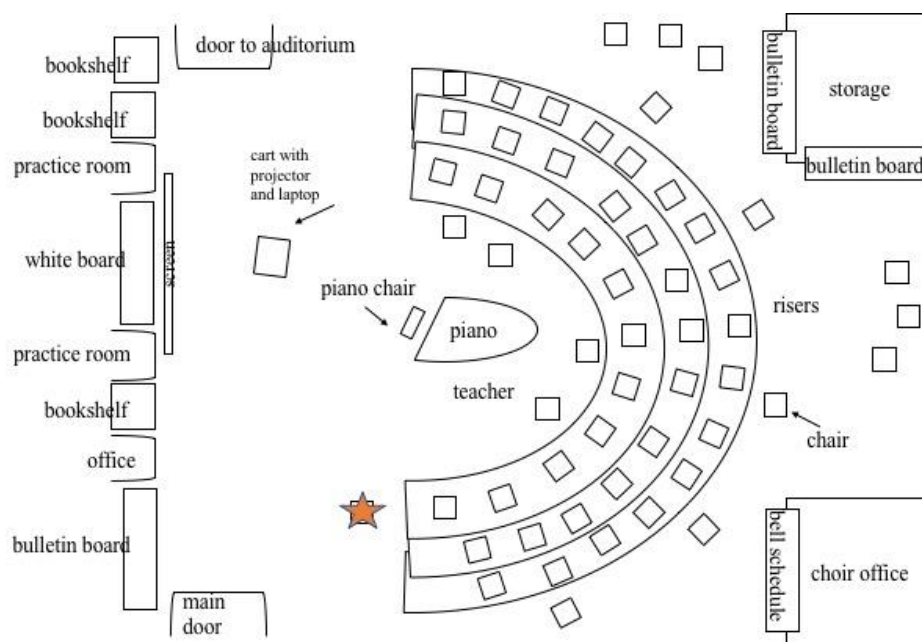


Figure 9. General education Choir classroom layout.

Because of how the layout was designed and then socially and spatially maintained, Jimena was often positioned to the side of and behind Mr. Armstrong and the accompanying pianist.

Moreover, there were no peers sitting near Jimena and she expressed that wanted to learn with and be physically closer to her peers. This positioned Jimena on the periphery of the choral arrangement, a class she really enjoyed. In fact, Jimena's photograph of the Choir room was taken from this location (see Figure 10). While discussing her picture of the Choir room she expressed, "Yeah. I liked it." That said, classroom layouts were active processes within learning spaces that could either position girls of color with intellectual and developmental disabilities as holders and generators of knowledge (Delgado Bernal, 2002) or dynamically dismiss their gifts and strengths. In other words, exclusionary schooling mechanisms could dismiss disabled girls of color through the ways in which classrooms were designed and maintained, even in the classes the girls enjoyed most.



Figure 10. Jimena's photograph of the Choir classroom.

Jimena expanded the photovoice project to include spaces and classroom layouts she was not assigned to but wanted access to,

ALM: Did you want to take those photos (of the Math class and Language Arts class) because you want to go there and take classes there?

Jimena: [Shrugs her shoulders.] I don't know.

ALM: Ok, just curious. Because here is the Computer class. [Points to Jimena's picture.] Do you get to take classes here?

Jimena: [Shakes her head NO.]

ALM: Not yet, would you like to?

Jimena: [Nods her head YES.]

During the photography session, Jimena wanted to go to Math and Language Arts classes to take pictures, but the classes were full of students. While Jimena was not sure if she wanted academic assignment in classrooms she had not been to, she was interested in assignment in Computer Sciences as well as Band, where she took photographs. Jimena also took a photograph of one of the Art rooms. When asked if she wanted to take a class there she said, "Um, maybe." Jimena and Amy expressed uncertainty about general education academic assignment. The girls' apprehensions echoed the layered complexities of materializations, particularly classroom layouts and academic assignments.

In Amy's case, she took three photographs of the individually assigned student desks with taped name tags in the self-contained special education classroom. Amy was not assigned to any other academic assignment besides Mr. Clifford's room. She did not take any pictures of general education academic assignment but discussed how much she wanted to take PE. Amy explained, "I want to go to PE. We can race. We can jump. We can play." Amy also wanted to take Band. In fact, she was particularly interested in learning to play the piano. Amy also wanted to attend Art classes in the main school building, including Painting, Ceramics, and Drawing.

Considering classroom layout, Amy preferred to sit up close, in the front of the classroom. However, her desk was in the third row from the front. Between the time that Amy

took her photographs and when she analyzed her photographs, Mr. Clifford exchanged the student desks for tables. He explained, “The reason we did that is simply because of the space... definitely more room to walk.” Mr. Clifford changed the classroom layout to give more space to walk around the classroom, not necessarily to give the students more opportunities to work on collaborative projects. From her perspective, Amy liked the new tables more than the desks. She explained the freedoms of the new classroom layout,

Amy: We can just sit down.

Mother: Con quién te sientas (Who do you sit with)? Con quién (With whom)?

Amy: Luna.

Mother: Oh, Luna?

ALM: Oh, are you?

Amy: Yeah.

ALM: You get to sit by Luna now?

Amy: Yeah, I got a seat and sat down.

Amy and her mother speaking Spanish.

Now, Amy sat by whomever she wanted, including her best friend Luna. Since there were no assigned seat, she could sit at different tables in the classroom depending on how she was feeling and thinking, even closer to the front of the room when she preferred. In this case, choice in seating afforded different learning and social opportunities.

In Tiffany’s case, she took nine photographs of the five classrooms she was assigned to (Choir, Art Forms, Jewelry, two self-contained special education classrooms) and a Ceramics classroom she had been assigned to the year prior (see Figure 11). She also drew the layouts of the five classrooms she was currently assigned to and discussed those during mapmaking. In her words, Tiffany preferred to sit “far in the back.” Looking at her photograph of the Choir room she explained, “I like this because this is my classmates and my classroom. I sit oh right here in the back. I sit right here, by the chair right here. I sit in the back. And (my friend) sits right here.

Mm hm.” In fact, Tiffany sat on the periphery and what was considered the back of the room in all three general education academic assignments.



Figure 11. Tiffany's photograph of a Ceramics classroom.

Tiffany also sat by a friend in Art Forms class along the periphery. Tiffany described important places within the Art Forms classroom layout as she mapped it. She said,

Tiffany: This is Ms. Forrester right at the table. This is a table, too.

ALM: Oh, the tables in Ms. Forrester's class?

Tiffany: Mm hm.

ALM: Mm hm.

Tiffany: (laughter^o) That's the students and this is the picture. Ms. Forrester's desk. This is where I stay. And her computer.

Tiffany used mapping to show all her classes and delineate her three favorites – Choir, Jewelry, and Art Forms. She said, “They're, um, my three favorite. This and this one, this one, and this one.” In her words “singing, jewelry, art” made it easier for her to learn at school.

Mr. Forrester, the Art Forms teacher, spoke at length about the classroom layout. She felt that students should be able to as she said, “sit where they want.” She continued,

I really like kids to have a lot of independence which sometimes is problematic. But more often than not, I think I like them to be able to interact with people and grow friendships sort of organically. And that can happen when you have choice about where you sit.

For Ms. Forrester, the layout held a sociospatial element wherein proximity lent to relationship-building as well as personal comfort. She felt choice was problematic when it became a classroom management concern when “kids act up and (then I) just move them.” Moreover, the sociospatial nature of the classroom layout was dynamic as she explained, “One day, someone will end up sitting with someone else and then they've maybe, through other classes, they've become better friends and then, so the seating will just sort of morph over time.” Teachers (Ms. Forrester) who allowed the girls to live out those subjectivities about where and with whom they wanted to sit may have been engaging in important steps towards cultivating inclusionary classroom communities (Annamma et al., 2013; Armstrong, 2007; Erevelles, 2011a).

In Rosa's case, she took four photographs of the assigned self-contained special education classroom layout, including one picture of her desk as designated with a name tag. However, she did not choose to talk about any of her pictures of the special education classroom. She did choose to map the special education classroom during the cartography activity. Rosa explained the classroom layout twice as delineated on her map,

This is the bathroom. Here's the desk. Here's people. Here's the grass. Here's the tables, but there's the cafeteria where we sit at... This is (HH), this is a desk. Here's the bathroom [tapping]. Here's the hallway [tapping]. I mean, here's the desk. Here's the bathroom. Here's the [tapping] classroom. Here's the hallway. And the door. And the desk, and the desks. Cafeteria... This is [tapping] me. I mean, this is, this is my friend. This is me, you, um, and here's a smiley face. (HH)

While the classroom and the cafeteria were not inside the same building, Rosa used mapmaking as an exercise to visualize how two physically separate spaces (annex and main school building) and the spaces within and around them were still connected through their social and spatial importance: (a) the annex (bathroom, classroom, desks, doors, hallway, people); (b) the main school building (bathroom, cafeteria, door, hallway, “where we sit at”); (c) what was situated

between the two (grass, sunshine); and the people within the spaces (e.g., “me,” “my friend,” “where we sit at”). When I asked Rosa if there was a reason she chose to map the classroom instead of the whole school she replied, “Yeah, because I don't know the whole school... I know my class only.” Rosa felt that she did not know the school well enough to map it. However, by combining these two spaces, mapmaking connected segregated spaces (special education classroom) to the rest of the school (cafeteria) through a sociospatial dialectic (Soja, 1980, 2010).

While Rosa was assigned to only one classroom for her entire day as a senior in high school, she took seven photographs of general education classrooms in the school. When I asked Mr. Clifford about general education academic assignment, he cited lack of resources and IEP team-based decisions. He said, “It kind of depends on staffing. I can't have one para go with a bunch of times... When it calls for it (general education academic assignment) in an IEP which is kind of an on-hearing basis.” Mr. Clifford equated lack of general education assignment to resource allocation in the school, including paraprofessional support and IEP team-based decisions (Ruppar et al., 2017; Ryndak et al., 2014). Consequently, Rosa's restriction in one segregated special education classroom for academic assignment was not about Rosa not being able to learn as one may assume, instead it was about lack of resources.

Irrespective of the institutional constraints, Rosa explained that “being in the same class” made it hard to learn. Rosa wanted more. Her pictures of other classroom layouts and learning spaces included the Choir room, an Art room, the gym, and the two self-contained special education classrooms situated in the main school building. Distinctively, Rosa took pictures of school spaces that reminded her of past elementary and middle school experiences. She said,

I used to do a lot, a lot of art. I used to go to a lot to art. It was my best thing to do. You can draw, you can color, you can read, you can make stuff out of paper. Or like, uh, what was it called, the other word? Um, newspaper. And you see a bunch of people with you, talking to you. They're, like, friends, and not.

Here, Rosa's photograph of a high school Art room evoked memories of an Art class she attended in middle school. Through discussion, she was also interested in general education assignment in Photography, Graphic Design, Chemistry, and Earth and Space Science.

Therefore, Rosa's photographs, maps, and counter-narratives exemplified the ways in which Rosa expanded the photovoice project to include spaces and classroom layouts she wanted access to and reimagined (Annamma, 2018b; hooks, 2000, 2015) for her academic assignment.

Across six cases, primary participants discussed the importance of classroom layouts, including where the girls preferred to learn within a particular learning space and with whom. In some cases, girls of color with intellectual and developmental disabilities were sitting in their ideal location within special or general education academic assignments. Teachers as secondary participants provided rationales for classroom layouts that sometimes revealed teacher preference and resource availability undermined student preference and potential.

Learning Tools: Materializations Withheld, Allowed, or Reimagined

Disabled girls of color shared the learning tools they had access to and used during learning activities through their photography, mapmaking, and counter-narratives. They also revealed some of their preferred learning tools. To review, students use learning tools to construct and re-construct knowledge on their own and within their learning communities (Rogoff, 2003; Shweder, 1990; Tuck & McKenzie, 2015). There may be a plethora of learning tools across a school or in a classroom including, pencils, drawing paper, computers, and calculators. Learning tools (materializations) are discussed separate from texts (discursive practices) as I conceptualized them as distinct from learning tools drawing from prior critical discourse analysis scholars (Gee, 2011) who refer to discourse as oral and written texts.

Across all six cases, disabled girls of color discussed how inclusionary and exclusionary schooling mechanisms were generated through particular learning tools. However, focal participants did not discuss Math and Science learning tools often. In fact, Jimena was the only participant who photographed Math-specific tools (e.g., Unifix cubes, replica paper and coin currency). No one took pictures of Science-specific tools (e.g., beakers, models). First, I discuss writing tools (e.g., pens, pencils, markers) and electronic devices (e.g., laptops, tablets) from the perspectives of five girls. Then, I look at computer programs from Meena's and Rosa's perspectives. Finally, in Tiffany's case, she discussed learning tools the other girls did not.

Withheld learning tools and radicalized resolutions. In five of six cases, girls of color with intellectual and developmental disabilities expressed how school personnel withheld learning tools. Withholding learning tools most often took place inside the special education classroom, and this power was wielded by the majority white special education staff. I defined Withholding and Radicalizing Learning Tools as “Girls of color with intellectual and developmental disabilities describe how learning tools are afforded or withheld. As a result, girls reimagine radical solutions for access to and use of learning tools.” While the solutions may not sound radical (e.g., increased access to technology), given the several reasons why the teachers did not provide these tools, the solutions are indeed radical.

Writing tools. Writing tools were one form of learning tool explored through photographs and counter-narratives. Amy pointed to the markers on the Talking Mat and proclaimed, “That one.” Amy preferred markers over pencils or pens. However, pencils and crayons were the most writing tools available in Mr. Clifford's classroom. When I asked Rosa about learning tools in her classroom she explained, “Pencils, crayons. Mm, that's all I can think of.” When Rosa went back to her classroom to ensure she had captured all the learning tools that she wanted, she took

one photograph – a picture of a handful of pencils she obtained from Mr. Clifford’s desk and then positioned carefully on her own desk. In this special education classroom, writing tools were kept in a small three-drawer storage container on the teacher’s desk. In other words, Amy and Rosa did not have their own writing tools and access was held at the teacher’s desk, not in a communal area of the classroom. Often, disabled girls of color assigned to this space would have to ask permission from the majority white special education staff to use a writing tool.

I asked Mr. Clifford if the pencil container was on his desk because the students did not have a place to store materials. He explained,

Yes, probably space honestly. Probably just again fallacy. I mean, we've used different settings at different times, you know. And sometimes we'll have some students who will, because of their disability, have situations where they may jam a pencil. You know what I mean?

Mr. Clifford first cited “space” and “fallacy” as two reasons for the absence of communal or personal writing tools. Then, he said “because of their disability” as another reason why he had situated the writing tools on his desk and not in more student-centered areas of the classroom that may have generated subtle power to the girls.

Emma-Mae preferred to have choices over her writing tools and sometimes complete her assignments with markers. During the photography session, she chose five particular markers (see Figure 12). “Because I like the colors,” she said and set them on the table. Later, Emma-Mae said, “I like, take pic, a picture of the markers... Because I like it. I like to color.” In the special education classroom, Emma-Mae had to ask for permission from Ms. Taub or Ms. Snow anytime she wanted to switch from a pencil to a different writing tool. Further, Emma-Mae was not allowed to hold more than one writing tool in her hand at a time. Other students (majority male) did not have to ask Ms. Taub and Ms. Snow for permission to use the markers. As the youngest Black girl, Emma-Mae’s access to preferred writing tools was policed (Annamma et

al., 2016; Crenshaw et al., 2015; Wun, 2016a). Exclusionary schooling mechanisms sedimented around Emma-Mae as she experienced surveillance not only in the cafeteria and within the special education classroom layout but also of her writing tools.



Figure 12. Emma-Mae's photograph of markers.

When I inquired about Meena's preferences, she told me she wanted to use pens over pencils. Yet, I never observed Meena with access to pens. Moreover, the amount of writing that was required from her in class was too much. Meena explained through the translator,

ALM: I'm wondering how she feels about the amount of writing that she has to do in class. Is it too much, is it not enough, is it just right?

Painda speaking with Meena about writing.

Meena: [Nods her head YES, the writing is too much.]

ALM: Is writing a lot? It is too much?

Meena: [Nods her head YES.]

Meena's solution to the lengthy writing tasks in class was not only to use a pen instead of a pencil or to stop writing altogether but to use other learning tools. She explained,

ALM: Would she rather use an iPad to type instead of writing?

Painda and Meena speaking her home language.

Meena: [Nods her head YES.]

ALM: Does your hand get tired?

Painda and Meena speaking her home language.

Meena: [Nods her head YES.]
 Painsa and Meena speaking her home language.
 Painsa: She said it hurts a little too.

Meena would rather use an iPad to augment some of the writing demands. While it seemed as though her teachers had not noticed Meena shaking her hand in the air during long writing assignments as observed in field notes from the first observation of Language Arts, Meena had already reimagined radical learning tool solutions for writing (Annamma, 2018b; hooks 2000, 2015). Moreover, Meena was engaging in radical self-care (P. H. Collins, 2009; Lorde, 1984). All the writing was hard on her hands. Her hands got tired and sometimes they hurt. Meena's solution for copying lengthy passages from the white board was savvy and creative as she reimagined using an iPad for typing. Perhaps accessible technologies would support her in her learning, and yet would not cause her writing hand to become tired and sore.

Ms. Taub, Meena's Language Arts teacher, discussed how teaching writing was difficult for her. She said, "I need to do my own learning around teaching writing at a lower level. Like, it's, writing has always been, like I've felt, difficult to teach. And this year it feels like a lot harder even than it ever has." Ms. Taub admitted that she struggled to teach writing. Maybe this explained the focus on writing conventions (e.g., Daily Language Review, copying). In all observations of writing, Ms. Taub emphasized conventions. She wanted the students to write on the lines, start on the left side of the paper, and identify capital letters and punctuation (as indicated on Meena's YES/NO card, discussed later). Ms. Taub explained,

You know, just copying, being able to copy from board to paper. (Meena's) handwriting is improving in time. Her pace has improved in time. Her accuracy has improved in time. Even if it, this is when it's just copying. She is copying more accurately.

Ms. Taub was pleased with Meena's copying accuracy but had not noticed her hand getting tired.

When describing their preferences, primary participants would sometimes cite tools they disliked. I observed Jimena most commonly writing and completing her assignments with markers. When I asked her if she liked using markers, she replied,

Jimena: Um, no.

ALM: No. But I see you use markers a lot.

Jimena: [Nods her head YES.]

ALM: But you would rather use a pencil or a pen?

Jimena: [Nods her head YES.]

Jimena explained that she had not been asked what writing tools she preferred. Her ideal writing tools were pencils and pens and they were located on the same shelf as the markers in the back of the classroom. Yet, Jimena was not invited to make writing tool choices from the materials shelves on her own. Instead, school staff would bring the marker tin to Jimena and ask her what color she wanted. Disabled girls of color discussed the ways writing tools were withheld and consequently, their imagined solutions.

Electronic devices. Student-assigned electronic devices were absent across three cases. Through conversations, it emerged that laptops and tablets were desired but often withheld learning tools across five of six cases. I explore these case similarities and then, case difference.

Case similarities. In theory, every student at the middle school and high school was assigned a laptop computer (e.g., Chromebook, MacBook) or tablet (e.g., iPad) by the school district at the beginning of the school year. Although Rosa and Amy were interested in using laptops and tablets as learning tools, they did not receive their assigned devices from the school district until December. By January, they had rarely been used if at all. Rosa explained the situation in Mr. Clifford's room, "Yes, (we have computers). But we don't use them. (The laptops and tablets are) in the closet." Amy agreed with Rosa's assessment of the situation,

ALM: Didn't you get an iPad?

Amy: [Nods her head YES.]

ALM: But you haven't started using it?

Amy: [Shakes her head NO.]

The students in Mr. Clifford's class had been assigned laptops and tablets four months later than the rest of the high school. Mr. Clifford explained, "Unfortunately, last year we spent the entire year waiting for our computers... I don't think it's a conspiracy, but it is weird a lot of times we do fall last on the list." Without electronic devices, girls of color with intellectual and developmental disabilities were not afforded opportunities to develop their technological skills for their present schooling as well as their postsecondary futures, including accessing the Internet, collaborating with peers on projects, and practicing word processing.

In addition, access to and use of district-assigned electronic devices were dependent on how teachers positioned students. Mr. Clifford explained, "It depends on the kid... They are assigned a laptop sometimes depending on their own ability. Sometimes they may have iPads." As Mr. Clifford noted, access to electronic devices for girls of color with intellectual and developmental disabilities was determined by "ability" whereas access to electronic devices for other students without disability labels was dependent on their enrollment in school. The processes of learning tool allocation held social, spatial, and ideological consequences for the girls when learning tools became property dictated by ability (Annamma et al., 2013).

During her third interview later in January, Amy pointed to the picture of the laptop on the Talking Mat and said, "That's in the cupboard. (My classmate) used it. She watched (a program) on this one (assigned device)." As Amy stated, once the students were assigned laptops and tablets, Mr. Clifford withheld the devices by putting them in the cupboard. By April, Mr. Clifford said the students were "using them (the electronic devices) somewhat." However, according to Amy and Rosa, they were not afforded opportunities to use their assigned devices in Mr. Clifford's class. In April, Mr. Clifford cited "keeping them charged" and being "under-

resourced both in terms of staffing and space” as two barriers. Mr. Clifford felt like the classroom space was too small and 3 school staff for 11 students was insufficient. He claimed computers and tablets were in his words, “instructionally valuable” and that the students “do use them a lot of times at home even if they don’t use them here (at school). A lot of them do at least.” Mr. Clifford felt the students needed more support to use their electronic devices but also cited how the students had computer strengths and gifts they cultivated at home (Yosso, 2005).

During focus group conversations, the high school girls viewed electronic devices as “supports.” Then they determined inequitable access as a “problem” and an exclusionary schooling mechanism. Some students used their electronic devices daily and repeatedly throughout the day whereas Amy, Jimena, and Rosa rarely, if at all, had access to or used their electronic devices. Not every student had the same amount of access to and time with electronic devices, illuminating an ideological positioning of disabled girls of color as different and less than based on goodness and smartness (Broderick & Leonardo, 2016). This also left their potential gifts and strengths with electronics unrecognized based on assumptions about what they could and could not do (Morrison & Annamma, 2018a). This enabled some students, particularly students without disability labels, and removed opportunities for disabled girls of color (Annamma et al., 2013).

Furthermore, the girls at the high school did not want to tell the adults how they felt about the electronic devices. Rosa explained, “Because the teachers are going to get mad at us. You’ll be fine (they would say).” Not every student at the school had access to electronic devices, particularly disabled girls of color and the focal participants felt uncomfortable sharing their concerns without fear of additional barriers or negative consequences. This aligns with previous

literature on youth of color staying quiet about school concerns as a preventative measure in anticipation of punishment (Broderick & Leonardo, 2017).

At the middle school, Emma-Mae and Meena were each assigned a Chromebook. I asked Emma-Mae during her first interview about electronic devices,

ALM: Does it help you to use electronic devices, like computers and laptops?

Emma-Mae: Yeah.

ALM: iPads?

Emma-Mae: Yeah.

Emma-Mae felt laptops and tablets helped her learn. She and Meena used the Chromebooks to access Math and Language Arts activities through a K-6 online sequential learning program called Studyladder (2019). I saw Emma-Mae use the Chromebook once over the course of three Language Arts observations and Meena use it twice. However, Meena did not like the Chromebook laptop. She explained,

ALM: You like the laptop?

Meena: [Points to the laptop and shakes her head and finger NO.]

ALM: You don't like it.

Meena: [Points to iPad and shakes her head YES].

ALM: You like the iPad and you don't like the laptop?

Meena: [Nods YES.]

Meena preferred the iPad over the Chromebook. Emma-Mae took two pictures of two teacher iPads on the front table. There was a tub of iPads in the classroom for students but through my time at school (3 ½ months), I did not see Emma-Mae or Meena use one of the student iPads.

Jimena was the only student with daily access to an iPad and chose to discuss her photograph of the iPad in her interview. She said she took the picture because, “(It’s a) learning tool. I like the iPad.” Jimena liked using the iPad as a learning tool. However, Jimena’s access to and use of the iPad was dictated by the adults in the room. Jimena said, “(I use the iPad for) my breaks.” The iPad could only be used at particular “break” times as determined by the teacher.

Ms. Randle concurred that Jimena only used the iPad “just for free time.” Also, this iPad was not assigned to Jimena by the school. Ms. Randle explained, “The iPads (in the classroom) are for anybody that wants them... They're not assigned... The other kids (in the school) do have laptops that are specifically assigned to them, but not in our class.” In other words, Jimena was not assigned an electronic device.

While Ms. Randle said she was willing to let any student in the class use one of her devices, unlimited access was afforded to one boy of color in class but not to Jimena. I observed this student holding, watching, and listening to an iPad throughout Language Arts and other observed class times. In contrast, Jimena’s access to the iPad was afforded only for particular times. Yet, Jimena wanted more and imagined radical tool solutions wherein she used an iPad for Language Arts, Mathematics, and Social Studies. In five cases, disabled girls of color discussed the ways electronic devices were withheld from them. As a result, they centered the margins and generated crucial and transformative solutions (Crenshaw, 1989; hooks, 2000, 2015).

Disliked computer programs and radical solutions. In two cases, girls of color with intellectual and developmental disabilities expressed how they were exposed to computer programs they did not like using in the special education classrooms. I defined Disliking Computer Programs and Working Solutions as “Girls of color with intellectual and developmental disabilities describe their experiences with particular computer programs as learning tools. As a result, girls reimagine radical solutions for computer programs.”

Computer programs. Rosa and Meena described computer programs that they did not enjoy using. For example, Rosa discussed a Mathematics program on the teacher’s computer that was part of the morning routine. Rosa explained, “I don't like Starfall. Because that's old from last year. That's why I... I don't like Starfall. It's (the) clock. Just the clock.” In Rosa’s class,

Starfall (2019), a website with Language Arts and Math activities for students in grades preK-3, was used for calendar (e.g., date, month) and time activities. Mr. Clifford explained, “We start out with our morning group and a lot of times we’ll have one of the paras do (Starfall).” As a senior in high school, Rosa wanted something new and different. She may have wanted access to an age-sensitive, high-interest computerized Math program. However, she was not afforded this type of learning tool. Thus, as a tool that did not hold her as a learner and a doer, the computer program operated as an exclusionary learning tool (Annamma et al., 2013; Erevelles, 2011b).

Meena discussed how Studyladder impacted her learning through her translator,

ALM: It’s called Studyladder and they’re learning on the laptop. I’m wondering if she feels like it helps her learn?

Painda and Meena speaking her home language.

Painda: Do you like it?

Meena: [Shakes her head NO.]

ALM: No, she doesn’t like it.

Painda and Meena speaking her home language.

Painda: Do you learn from it?

Meena: [Shakes her head NO.]

Meena shared how she disliked Studyladder and felt she was not learning from it. When I observed Meena using Studyladder, she was identifying shapes and colors. While it is a sequential learning program with many levels and content areas (e.g., Physics, Biology, Language Arts), Studyladder was set up by the teacher. Consequently, Meena’s teachers could constrain or afford her access to new learning content. Meena’s solution was to increase access within Studyladder or a different computer-based program. In other words, she was not opposed to using Studyladder if she could access other material.

Rosa and Meena exposed how some of their existing learning tools, the ones they accessed daily through either the teacher’s computer as in Rosa’s case or the Chromebook in Meena’s case, operated as exclusionary schooling mechanisms because the girls did not find

them helpful or generative. This may have been because the programs were used to practice skills the girls felt they had mastered (e.g., identifying colors and shapes in middle school, practicing telling time in high school) and thus, did not challenge them. In addition, despite the multiple subjects and levels of learning available on these programs, the girls' preferences were absent from the educational decisions that impacted them most.

Case difference. In Tiffany's case, she had access to learning tools that were important to her within multiple academic assignments. For example, Tiffany used a school-assigned laptop (MacBook Air) to access Google Classroom, type notes, search the Internet, and store her photographs. She also used the MacBook Air as a learning tool during interviews, group discussions, and exhibit preparations.

In addition, Tiffany had access to an array of Art-related tools and talked about the tools. She said, "In Jewelry, you use the tools to make a bracelet. You fix (the bracelet with) the tools... Same in Art too, the tools too. You can make projects (with) them." Learning tools played an integral role in Tiffany's academic process in the Jewelry class.

Tiffany also told me in detail how she made the beads for a bracelet she designed in Jewelry class with learning tools. She said,

You need a stick, you need this paper to cut and twist it around. Twist it around (again). Then you need some tools. You need the tools for this (bead) and this (tool) for the (bracelet). You need this purple tool... A pinch tool to get it together. I glued them (with a lacquer), glued them like shiny.

Learning tools were key elements Tiffany shifted to when talking about her academic experiences. She talked about how she worked with clay in two of her three high school Art classes and paper and wire in Ms. Forrester's class. She also discussed the importance of learning tools in Choir, including the binder she stored all of her choral music in, accompanying percussion instruments (kettlebells), and the Choir's performance outfits. She commented, "I

don't bring anything specific because everybody put the things (performance outfits) right here (in the classroom)... It's nice." Tiffany's assignments in different classrooms enriched her access to learning tools she enjoyed using and was excited to talk about.

Disabled girls of color did not often photograph Science- and Math-specific learning tools. Therefore, what was absent from their pictures was as important as what was present (Gill & Erevelles, 2017; Harper, 2002). As observed in field notes, I did not see Science learning tools readily available in self-contained special education classrooms, but the girls were interested in Science as they were in Mathematics. Tiffany described Math when she was in middle school as "amazing" and Meena discussed that she wanted more Math. When I asked Emma-Mae about her favorite subjects she replied,

Emma-Mae: Math.
 ALM: Reading?
 Emma-Mae: Math.
 ALM: Writing?
 Emma-Mae: Math.
 ALM: Science?
 Emma-Mae: Math.

Although Emma-Mae continued and listed Reading, Science, and Social Studies as other favored subjects, her assertion exemplified how much she truly liked Math. When the lack of Math instruction in Mr. Clifford's class came up in Amy's third interview, she commented, "Oh. Because we watch movies?" That said, I did not observe Mathematics in Rosa and Amy's classroom beyond telling time and counting as Rosa described, "'We count. We count. What's it called? We count pictures. You have to count them all together, to make the number the same number amount.'" At the middle school, Emma-Mae and Meena both expressed how they did not like Ms. Snow who taught Math in the special education classroom. The lack of Science and Math-related learning tools was not because disabled girls of color did not like these subjects.

Rather, meaningful and consistent learning opportunities and tools as well as teachers they could connect with were not consistently afforded to the girls.

Whether they were discussing their preferences, revealing instances of how tools were withheld (Puar, 2017), or generating solutions (hooks, 2000, 2015), girls of color with intellectual and developmental disabilities spoke directly to how social and spatial processes existed within and through learning tools and how these processes were interconnected and reciprocally informed one another (W. E. B. Du Bois, 1989; Soja, 1980, 2010). Ideologies and actions worked together and impacted which tools they could use while learning, for how long, and why those particular tools were available. Moreover, these tools became gatekeepers, affording opportunities in Tiffany's case and in all others, constraining the range of subjects and varied opportunities for learning.

Schooling Mechanisms Generated Through Discursive Practices

The second set of findings pertain to the research question: *How are inclusionary and exclusionary schooling mechanisms generated through discursive practices (e.g., talk, texts, actions) for girls of color with intellectual and developmental disabilities?*

Disabled Girls of Color Initiate Through Talk and Actions

Critical discourse analysis (Gee, 2011; R. H. Jones, 2014; Rogers, 2011) revealed the most common participation structures within the corpus of information were teacher-led with few instances wherein youth collaborated in small groups or dyads. Rather, youth most often worked in whole group or individual participation structures. Most often, teachers gave directions to the whole class and the focal participant was a receiver of those directions (241 sequences). The second most frequent pattern occurred when teachers engaged in teacher-initiated interactions with the focal participant (122 sequences). These interactions included

student-specific directions, checking in, asking questions, and greeting. The third most frequent pattern occurred when teachers engaged in IRE sequences with the focal participants individually or the whole class (74 sequences). Participation structures that upheld IRE patterns were present within all three self-contained special education classroom assignments as well as in Choir, PE, and Theater. IRE patterns occurred less frequently in Art Forms and Jewelry.

The abovementioned participation structures positioned the teacher as the first speaker. Considering my goal to center the experiences of girls of color with intellectual and developmental disabilities, I was interested in how the primary participants initiated a turn through talk and actions and then, if and how their teachers' responded to them as well as if discursive power shifted to the students and for how many turns (Lindwall, Lymer, & Greiffenhagen, 2015; Yule & Brown, 1986). I considered these resilience initiations because they were discursive acts of determination and strength that disabled girls of color engaged in despite the multiple oppressions they faced in school. The concept of resilience was informed by prior research on Black girls in high school negotiating power within classroom contexts (S. P. Carter, 2006), the ingenuity of girls of color with disabilities in schools (Annamma, 2016, 2018b), and the school experiences of Black girls (Evans-Winters, 2011) and Latina girls (Denner & Guzmán, 2006) from a strengths-based perspective.

First, I describe how primary participants initiated talk and actions with their teachers about their completed work. Then, I describe how teachers responded to the girls' initiations about work in progress. Afterwards, I examine how disabled girls of color asked questions and made requests through talk and actions. Finally, I look at how primary participants repositioned in response to marginalization by selecting autonomous alternatives, choices different from what their teachers recommended, and how the teacher responded.

Girls' resilience initiations about their completed work. I defined Girls' Resilience Initiations for Work Completion as "Girls of color with intellectual and developmental disabilities attempt a discursive turn with their teachers through talk and actions about their completed work." First, I discuss how teachers took up the girls' initiations. Then, I consider when teachers did not take up the girls' initiations. Finally, I discuss Rosa's case difference wherein Rosa responded to the teacher's initiation.

Teachers respond to the girls' resilience initiations about completed work. Teachers took up the girls' resilience initiations about their completed work with questions in two (Emma-Mae, Tiffany) of six cases and affirmations in three (Emma-Mae, Jimena, Meena) of six cases. Next, I give representative examples of these sequences.

In Tiffany's case, she initiated with the teacher by saying Ms. Forrester's name:

Tiffany: Ok, Ms. Forrester.

Ms. Forrester: You're done?

Tiffany: [Nods her head YES.]

Ms. Forrester: Ok. Let it sit there and dry.

Tiffany: Mm.

Ms. Forrester: Ok, yeah let's let it sit until it dries.

Tiffany: ((squeal sound°)) [Pushes in her chair and her peer's chair. Leaves the classroom.]

Ms. Forrester took up Tiffany's initiation with a closed question ("You're done?"). Ms. Forrester's discursive practices were inclusionary because she acknowledged Tiffany and gave her feedback about next steps. However, with repeated directions and minimal talk and actions from Tiffany, Ms. Forrester missed a critical opportunity to engage with Tiffany more deeply about her sculpture project (Michaels & O'Connor, 2015).

Ms. Forrester was actively working on her questioning techniques. She explained how she was trying to apply her "philosophy of wanting students to feel that they're in a safe place, like emotionally, physically, also artistically, and creatively, so that they can feel free to try new

things or make mistakes” to how she was “questioning kids about their work.” However, institutional constraints may have impacted her efforts in this sequence. The school district assigned separate bus schedule required Tiffany leave Art Forms class early each day. Ms. Forrester explained, “that's really because I just wasn't paying attention to the time... It (the early bus) does make it a little harder because it's another thing to remember or keep track of.” Short on time, Ms. Forrester pivoted first to a closed question (Myhill, 2006). It was common for Ms. Forrester to make these discursive moves when Tiffany initiated. However, when Ms. Forrester initiated, her questioning techniques were more varied.

In Jimena’s case, she used actions and physical presence to initiate with Mr. Armstrong:

Jimena: [Hands completed concert reflection to Mr. Armstrong.]

Mr. Armstrong: [Takes concert reflection papers from Jimena.] Thank you!

Jimena: Yep. [Nods her head YES. Smiles.]

Mr. Armstrong responded to Jimena’s resilience initiations about her finished work with affirming actions (taking the reflection paper) and talk (“Thank you!”). Jimena’s initiation with Mr. Armstrong felt like a significant move as Jimena had one student-initiated and two teacher-initiated interactions with Mr. Armstrong over two recorded observations (75 minutes total). By initiating, Jimena offered Mr. Armstrong a discursive opportunity to talk with her. Mr. Armstrong’s talk was inclusionary as he showed gratitude and accepted the work, but he did not inquire further about Jimena’s work or invite her to join the class. Instead, Mr. Armstrong turned to Ms. Randle and spoke around Jimena, not to Jimena but to Ms. Randle, about plans for class. This move resulted in a break in the turn sequence. Affirmations recognized the girls but did not guarantee generative talk and actions about learning (Berry, 2006b).

In Meena’s case, she used actions to signal she was done with a page in her spelling book during Language Arts in Ms. Snow’s small group:

Meena: [Slides her spelling book to Ms. Snow.]

Ms. Snow: [Picks up the book. Looks at it. Writes a star at the top.] Good job. [Turns the spelling book to the next page and sets it in front of Meena.]

Meena: [Slides her spelling book closer to her.]

Ms. Snow responded to Meena by looking over her work, evaluating (star), and giving praise (“Good job.”). Then, Ms. Snow used actions, which held discursive power, to direct Meena to work on the next page. Meena’s initiation was a discursive opening for Ms. Snow to engage with her as a learner about her spelling literacy. Importantly, this was an example of how discursive practices could generate inclusionary schooling mechanisms if a teacher read subtle student actions and responded. Also, this was an opportunity for Ms. Snow to support and augment student-teacher communication for a more student-centered learning experience. Without engaging with Meena through talk and actions, the turn sequence ended. Teachers’ discursive practices could operate in exclusionary ways when they missed opportunities to engage reciprocally about learning with the focal participants (Durden & Dangel, 2008).

Teachers do not respond to the girls’ resilience initiations. In three (Amy, Meena, Tiffany) of six cases, there were instances in which teachers did not respond to the girls’ initiations that they were finished with their work. In Amy’s case, she used talk five distinct times over the course of more than six minutes to initiate a turn with Mr. Clifford about her completed collage project. I show the time elapsed in seconds between each attempt. Amy said:

Amy: I did it!

(18)

Amy: I did it!

(47)

Amy: Done!

(285)

Amy: I’m done!

(19)

Amy: I did it! I did it!

Despite Amy's enthusiasm and persistence, Mr. Clifford (and the three paraprofessionals in the room at the time) did not respond. It was possible that Mr. Clifford did not see or hear Amy as she did not approach Mr. Clifford but stayed seated at her desk. However, herein was another discursive opportunity to engage with a disabled girl of color about her work. Amy had worked all class period on a collage to represent the literary novel, *Esperanza Rising*. However, by not responding to Amy, the missed opportunity held exclusionary potential. Focal participants had subtle discursive power when teachers did respond to their initiations. Consequently, disabled girls of color held no discursive power when teachers did not respond to their initiations.

Case difference. There were no recorded sequences when Rosa initiated talk and actions with Mr. Clifford about her finished work. Instead, Rosa responded to Mr. Clifford's initiations about completed work. Mr. Clifford said:

Mr. Clifford: When you all are done with those flags, let me know.

Rosa: I'm done with my flag. I want to put it in my folder. Right?

Mr. Clifford: Ok. You can put it in your folder. You can put it in your classroom folder, if you're done.

Here, Rosa used a resilience response to communicate that she had finished the flag worksheet.

During his second interview, Mr. Clifford reflected on this interaction and said, "I talk too much, I could have asked more reflection on, kind of use that as springboard maybe for more time."

Upon reflection, Mr. Clifford recognized a missed discursive opportunity with Rosa.

In conclusion, the girls' discursive practices about their completed work were inclusionary as they sought to include their teachers in the learning process. The interactions were brief with no identified sequence involving more than seven turns. While teachers responded in four of five cases where a student initiation was identified, they missed opportunities to cultivate deeper knowledge and instead took a more procedural or formal stance.

Girls' resilience initiations about their ongoing work. In five of six cases, disabled girls of color initiated with one teacher participating in the study about their ongoing work. I defined Girls' Resilience Initiations for Ongoing Work as "Girls of color with intellectual and developmental disabilities attempt an initiation with their teachers through talk and action about their classwork in progress." First, I discuss how teachers took up the girls' resilience initiations about their ongoing work. Then, I consider the case difference.

Teachers respond to the girls' resilience initiations about ongoing work. Teachers took up the girls' resilience initiations about their ongoing work with questions in three (Emma-Mae, Meena, Tiffany) of six cases and affirmations in four (Emma-Mae, Jimena, Meena, Rosa) of six cases. Next, I give two representative examples of how teachers used questioning.

Here, Emma-Mae initiated with Ms. Taub about graphing her Daily Language Review points. Emma-Mae said:

Emma-Mae: Ms. Taub, I don't have any numbers.

Ms. Taub: Oh for Wednesday and Thursday, you guys didn't grade them?

Emma-Mae: Yeah.

Ms. Taub: That's fine.

Emma-Mae: See look. [Points to her paper.]

Ms. Taub: I'll just look at it.

Emma-Mae: So I don't have anything for Wednesday because we didn't do Wednesday?

Ms. Taub: I'll look at 'em, ok?

Emma-Mae: [Looks at her paper. Looks back at Ms. Taub giving directions to the whole class.]

Initially, Ms. Taub responded to Emma-Mae with a question. However, when Emma-Mae encouraged Ms. Taub to look at her paper, Ms. Taub did not walk over to Emma-Mae and engage with her about her concerns more personally. Instead, Ms. Taub told Emma-Mae at turns 6 ("I'll just look at it.") and 8 ("I'll look at 'em, ok?") that she would look at her packet later. Emma-Mae held subtle discursive power as she continued to talk with Ms. Taub, but the power

was limited when Ms. Taub would not take up her initiation to look at the packet. Ms. Taub ended the turn sequence when she turned to the whole class and started giving directions.

Tiffany initiated with Ms. Mayer when she was in close proximity. Tiffany said:

Tiffany: [Points to the video she likes.]

Ms. Mayer: You like that one?

Tiffany: Mm hm.

Ms. Mayer: What colors do you want to do?

Tiffany: Pink.

Ms. Mayer: Pink and what? Two colors.

Tiffany: Um, blue.

Ms. Mayer: Pink and blue?

Tiffany: Mm hm.

Ms. Mayer: Like this blue? [Displays a blue bead packet from a collection of beads.]

Tiffany: Mm hm.

Ms. Mayer: Yeah? Ok. So next class, we'll go ahead and get started on that. I'm going to have you sketch it out first. If you want to start sketching it now because you have about five minutes.

Tiffany: Mm hm.

Ms. Mayer: Ok? Or you can wait until next class. I'll let you choose. Ok?

Tiffany: Mm hm.

Ms. Mayer responded to Tiffany by asking her a question ("You like that one?"). She also offered an opportunity for Tiffany to make choices for bead colors and when she would sketch out her design ("now" or "next class"). With so many turns following her initiation, Tiffany held subtle discursive power as Ms. Mayer became the lead asking questions and giving directions and choices, taking 15 turns altogether. Ms. Mayer's questions resembled closed questions (Nystrand, Gamoran, Kachur, & Prendergast, 1997). Closed questions can operate as open questions when used as scaffolds to bridge ideas resulting in student discursive practices becoming more powerful and salient (Boyd & Markarian, 2015). Ms. Mayer ended the turn sequence as she walked away from Tiffany's table.

Case differences. There was no recorded instance in which Amy initiated with a teacher about her ongoing work. In Amy's case, she responded to Mr. Clifford's initiation. He said:

Mr. Clifford: Amy, do you want to bowl? Do you want to bowl? There's a lane over there.

Amy: [Shakes her head NO. Points to the cushion she is sitting on.]

Mr. Clifford: Nope, no. Ok.

Amy used actions to respond to Mr. Clifford's question and in turn, Mr. Clifford responded to Amy. She did not want to bowl as seen by her actions – shaking her head and pointing to the cushion she sat on. Amy's discursive practices were also a form of repositioning (Davies & Harré, 1990) as Amy spoke out and opted out of the activity (Candela, 1999; K. M. Collins, 2011b). Mr. Clifford accepted Amy's repositioning, but did not inquire further with her or engage with her about another topic. Instead, the turn sequence ended after three turns.

In sum, disabled girls of color engaged with their teachers about their ongoing work in five of six cases. Teachers responded to the girls in similar ways, with affirmations and questions, as they did when the focal participants initiated about their completed work. Notably, turn sequences were longer when the girls and their teachers discussed their ongoing work. However, questions were typically closed (Nystrand et al., 1997) which did not lead to deep conversations about knowledge construction.

Girls' resilience queries. Across all six cases, disabled girls of color asked at least one question or made one request with at least one teacher participating in the project through talk and actions about their learning. I defined Girls' Resilience Queries as "Girls of color with intellectual and developmental disabilities attempt a discursive turn by asking their teachers questions or making requests about their learning." In five of six cases, teachers responded to the girls' questions and requests. First, I discuss how teachers took up the girls' queries. Then, I consider when teachers did not respond to the girls' queries.

Teachers respond to the girls' resilience queries. The ways in which teachers took up the girls questions and requests were more varied compared to their responses to the girls'

ongoing or completed work. Teachers took up the girls' resilience queries with additional questions in two (Jimena, Rosa) of six cases, answers or directives in three (Emma-Mae, Rosa, Tiffany) of six cases, and affirmations in three (Emma-Mae, Meena, Tiffany) of six cases. Teachers also made assumptions or interrupted in three (Emma-Mae, Jimena Rosa) of six cases. In three cases (Amy, Emma-Mae, Rosa), teachers did not take up the girls' initiations. Next, I give representative examples of these sequences.

In Emma-Mae's case, she made a tool-related request in PE as she was looking for a well inflated basketball. She said:

Emma-Mae: [Holding an orange basketball and a yellow basketball.] ((inaudible))
 Ms. Summitt: [Walks over to Emma-Mae. Takes both balls from her and bounces them at the same time. The orange ball bounces away.] ((inaudible)) Just use that one.
 Emma-Mae: ((inaudible)) [Runs after the orange ball and picks it up. Dribbles the orange ball.]

Ms. Summitt affirmed Emma-Mae's request by helping her find a basketball with a better bounce. Then she followed up with a directive ("Just use that one."). She added,

I don't remember if we really talked about anything other than just swapping her out a good basketball, where she could be more successful... I mean, me just acknowledging that, like, (she was or) they were struggling and then help fix the problem.

Ms. Summitt admitted that she did not use this as an opportunity to engage in talk and actions with Emma-Mae around basketball skills (e.g., dribbling, shooting, passing) and strengths. However, she did initiate and instruct Emma-Mae on basketball skills, including passing and looking for open teammates, as observed in field notes from the second observation.

In Jimena's case, she used talk and actions to make a request at the end of the Language Arts block. She said:

Jimena: Eh. [Pointing]
 Ms. Randle: Huh?
 Jimena: [Pointing]
 Ms. Randle: What? Did I forget your foot things?

Jimena: [Pointing.]

Ms. Randle: What? [Looks in the direction Jimena points.]

Jimena: [Taps Ms. Randle.]

Ms. Randle: What? [Looks in the direction Jimena points.]

Jimena: ((inaudible)) [Pointing.]

Ms. Randle: Oh. [Points in the same direction as Jimena.] You can go see Ms. (Paraprofessional) if you want to.

Ms. Randle asked questions in response to Jimena's request. She took up the initiation by asking "Huh?" and attempted several repairs (e.g., repeatedly asking "What?"). Ms. Randle did not vary her questioning techniques but relied on repetition and context clues by looking in the direction Jimena was pointing. In doing so, some assumptions were made about what Jimena was asking ("foot things"). Jimena did not have additional augmentative and accessible communication technologies to pivot to when she wanted to make a request or when a repair was needed but used her multilingualism to communicate with Ms. Randle.

Ms. Randle shared that she had not "tried (augmentative and accessible communication supports) with Jimena this year." She asserted it was not about providing Jimena with supports and tools or asking her what worked best for her but, in Ms. Randle's words, "most of the time, it really boils down to knowing that person" because the district gave "the same, like, solution for every kid." Here, Ms. Randle positioned "knowing" Jimena as more important than inquiring into Jimena's desired supports and tools. Further, the district gave the same solutions for each student and this lack of institutional support was an exclusionary mechanism.

In Meena's case, she made a tool-related request in Language Arts class during a teacher-led writing activity. Meena asked:

Meena: [Holds up her pencil and points at the lead.]

Ms. Taub: [Sees Meena and reaches out her hand.]

Meena: [Hands her pencil to Ms. Taub.]

Ms. Taub: [Takes Meena's pencil and sharpens it from behind her desk. Returns the pencil to Meena.]

Although only actions were exchanged, Meena's gestures were taken up by Ms. Taub, as she led the writing activity. Meena made this request because the students in the class were not allowed to sharpen their own pencils and the sharpeners were kept behind the teachers' desks.

Ms. Taub described this request as a "sharp pencil obsession" and assured that she was "proud of (Meena) for making requests and saying what she wants." Still, a sharpening request was framed from a deficit perspective; instead of viewing it as something she needed for successful writing, it was perceived as an "obsession." In other words, it was incorrect or different for Meena to want something that did not align with Ms. Taub's white feminine standards (E. W. Morris, 2007; M. W. Morris, 2012). While Ms. Taub's actions honored Meena's presence by fulfilling her request, the way she positioned Meena as a learner did not.

In Rosa's case, she inquired about the collage activity. Rosa asked:

Rosa: Mr. Clifford, can we uh, can we make-

Mr. Clifford: You will need scissors probably, if you're able to. You will need glue.

Before Rosa could finish her question, Mr. Clifford assumed her question and interrupted her.

Mr. Clifford thought Rosa was asking about learning tools, instead of a literacy question.

Moreover, Mr. Clifford did not notice that he interrupted Rosa and therefore, did not ask for clarification and Rosa's intent remained unknown. With limited discursive power, Rosa did not attempt a repair on her own and her question went unanswered. When teachers interrupted the focal participants and then did not repair, their discursive practices did little to honor the girls.

Teachers do not respond to the girls' resilience queries. In Amy's case, she used actions to request a new magazine during a collaging activity. Amy asked:

Amy: [Holds up her magazine.]

The magazines were in a pile on the teacher's desk. As Mr. Clifford did not give any directions about the process an unspoken rule existed wherein the students would request magazines from

their seats. Then, staff would pick a new magazine for the student and deliver it to them at their desk. When Mr. Clifford did not take up Amy's request for a new magazine, a paraprofessional noticed and took it up. Amy's request was an entryway, albeit missed, to teacher-student interactions. Markedly, Amy's case was the only case out of six wherein a teacher did not take up any resilience queries. In fact, none of Amy's eight initiations were taken up by a teacher during this study. Often times, paraprofessionals and peers took up Amy's initiations. Discursive power could not shift to Amy when the teacher did not respond to her initiations.

Across all six cases, disabled girls of color attempted a discursive turn with a teacher by asking a question or making a request. Similar to the girls' initiations about their work, the conversations the girls opened with questions were short and teachers often overlooked opportunities to engage in prolonged exchanges about the girls' learning.

Girls Reposition in Response to Marginalization

Next, I discuss how girls repositioned (Davies & Harré, 1990) by choosing self-governed alternatives and how their teachers responded. Choosing self-governing alternatives was the sole form of repositioning that was identified across all six cases. Moreover, it was the only type of repositioning taken up by a teacher in at least one instance within each case. In other words, when disabled girls of color repositioned by sharing personal information, speaking out, and opting out of instruction, their teachers did not always respond to them.

Girls choose self-governing alternatives. Disabled girls of color repositioned by making a choice through talk and actions during instructional tasks. I defined Girls Choose Self-Governing Alternatives as "Girls of color with intellectual and developmental disabilities signal a choice (either on their own or with others) that is different from those suggested by a teacher

through talk and/or actions” (Annamma, 2018b; Shogren, 2013). First, I discuss how teachers took up the girls’ repositioning. Then, I consider when teachers did not respond.

Teachers respond to the girls’ self-governing alternatives. Teachers responded to the girls’ self-governed alternatives with directives in three (Amy, Emma-Mae, Meena) of six cases, questions in two (Jimena, Tiffany) of six cases, and interruptions in Rosa’s cases. Next, I give representative examples of these sequences.

In Emma-Mae’s case, she used actions to reposition and chose a self-governed alternative different from what her teacher requested:

Ms. Snow: I’ll still help you bud. I need her to sit here. Ok. Feet on the floor? [Looks at Emma-Mae’s feet.] Great. Here we go. Put your finger on the first word.

Emma-Mae: [Points to the first word with her pencil, holding it in her left hand.]

Ms. Snow: Finger.

Emma-Mae: [Puts the pencil down. Points to the first word with her first finger of her right hand.]

Emma-Mae repositioned in response to Ms. Snow’s request to “Put your finger on the first word” by using her pencil instead of her finger. Ms. Snow responded to Emma-Mae’s repositioning by giving additional directives. As she tried to change Emma-Mae’s behavior, including where and how she sat and how she pointed, Ms. Snow’s talk and actions were exclusionary because she used them to dictate what Emma-Mae did with her body.

In Tiffany’s case, she used actions to reposition and make an independent choice about where she wanted to sit during the teaching demo in Jewelry class. I show the teacher’s wait time lapsed in seconds:

Tiffany: [Sitting at her table.]

Ms. Mayer: Alright guys, so. All the way up here. Come up here and work with us, girls. (9)

Ms. Mayer: Tiffany, why don’t you come up here too? There’s still some room.

Tiffany: [Looks up from table. Stays in her seat.]

Ms. Mayer: Ok, guys so um, there is going to be a few things that you’re going to need to have with you to work on this and I provide all of that to you...

Ms. Mayer did not respond to Tiffany or engage with her about why she did not want to come to the front in the moment. Instead, she started the teaching demonstration and afforded Tiffany her choice. In Tiffany's words, she felt "shy" in Jewelry class early in the semester and preferred to sit at the back table instead of at the demo table during teaching demonstrations. Towards the end of the semester, Tiffany joined the demo table and she credited Ms. Mayer with helping her to feel more comfortable. It was unclear if Ms. Mayer talked to Tiffany about the teaching demonstrations but by allowing Tiffany to hold her choice in the moment, Ms. Mayer afforded Tiffany nuanced power in the Jewelry class. By doing so, Ms. Mayer's talk and actions operated in inclusionary ways affording Tiffany her self-governed alternative (Annamma et al., 2013).

In Rosa's case, she used talk to reposition in response to Mr. Clifford's comment about "a kids' party" and convey her sovereignty:

Mr. Clifford: So, a kids' party.

Rosa: I didn't draw a kids' party. This is my, my-

Mr. Clifford: I'm going to come around and see how you're doing before you go.

Rosa: Mr. Clifford, look at mine.

Mr. Clifford: ((inaudible)) [Walking around the room looking at some students' work.]

In response to Rosa, Mr. Clifford interrupted her and then commented that he would be looking at the students' pictures. Rosa waited two minutes for Mr. Clifford to grant her time and attention to share her work. By not acknowledging Rosa's willingness to share how she had conceptualized the activity and then causing her to wait for two minutes, Mr. Clifford's talk and actions operated as exclusionary mechanisms. Across the six cases, teachers responded to at least one self-governed alternative each girl elected within the learning context.

Teachers do not respond to the girls' self-governing alternatives. In all six cases, there were instances where teachers ignored girls' attempts to select self-governed alternatives.

Meena's case is a representative example of this. I show time lapsed in seconds:

Meena: [Gets her picture from Mr. Fenn's desk.]

(8)

Meena: [Sits down. Looks around at the class.]

(7)

Meena: [Begins to draw propping the picture up with her knee.]

Meena and her peers were putting the chairs back on the designated chair row lines at Mr. Fenn's request. When a few more chairs were still being relocated, Meena took the drawing that Mr. Fenn had confiscated at the beginning of class off his desk and sat down with it. Mr. Fenn never responded to Meena's repositioning. In this instance, not responding may have operated as both inclusionary and exclusionary schooling mechanisms. It may have been inclusionary because it afforded Meena subtle power after her teacher had taken her drawing. Meena worked on the art piece for the last 10 minutes while the class played what Mr. Fenn considered a "trust-based game." At the same time, Mr. Fenn did not check in or invite Meena to play the game.

As observed, focal participants had few opportunities to exert choice and preference in their learning within the classroom contexts. Therefore, it was important to notice the girls' attempts to select self-governed alternatives. While some girls were afforded nuanced moments of power through repositioning, it was subtle and brief. Consequences included affording Tiffany the opportunity to sit where she preferred, Rosa to write and draw what she wanted, Jimena to hand in her own work to the Choir teacher, Emma-Mae to have a momentary social interaction with a peer, and Meena to draw during Theater class. In four cases, teachers' talk and actions operated in exclusionary ways as they did not check in with the focal participant but used discursive practices to quickly regain control of any brief power the girls attempted to hold.

Discursive Practices Traverse with Learning Tools

The third section examines the connections between materializations and discursive practices from the primary participants' perspectives. Here, themes focus specifically on texts and learning tools as well as augmentative and accessible communication technologies.

Texts and Learning Tools: Sociospatial Literacies and Re-Boundaried Solutions

Through photography, mapmaking, and counter-narrative, disabled girls of color conveyed the importance of texts to their school experiences and their boundaried (Annamma, 2018a), or constructed and limited, access to textual opportunities at school. For this project, I considered texts as anything with textual material and information, including novels, text books, posters, and worksheets with letters and numbers. As disabled girls of color identified how exclusionary schooling mechanisms were generated through texts and lack of opportunities with texts, they also envisioned promising solutions (hooks, 2000, 2015) by re-boundarying (Annamma, 2018a). Here, I expand Annamma's (2018a) definition of re-boundarying to include what disabled girls of color needed to succeed and how they got it or could get it, their resolutions in response to their limited access to and use of texts.

Each primary participant opted to photograph texts based on her interpretation of the photovoice prompts focused on school spaces and learning tools. This was theory-building (Anzaldúa, 1990; P. H. Collins, 1998; Delgado Bernal, 1998; Pérez Huber, 2009) because girls of color with intellectual and developmental disabilities expanded the conceptualization of the prompts which focused on materializations and in doing so, revealed how inclusionary and exclusionary mechanisms were generated through texts. Said differently, disabled girls of color conceptualized texts as learning tools – tools that supported their learning. Across six cases,

photographs of texts included books found in self-contained special education classrooms or in school or local public libraries.

In Emma-Mae's case, she took a picture of the book, *The Dress and The Girl*, a book she had checked out at the public library. While looking through her album she commented, "And there's a book. Yeah." Emma-Mae also took two photographs of books on the shelves in the school library. However, she preferred going to as she said, "The big one." The big library was the public library near the school. It was much larger than the school library and had an array of textual materials for youth and adults, including more literary options for Emma-Mae. Ms. Taub and Ms. Snow took the class there regularly to check out books and by doing so, resisted the absence of texts at the school (Annamma et al., 2013).

Access to the public library was especially critical as Emma-Mae did not like the book options in the self-contained special education classroom. She explained, "Those are stupid books... I don't like my teachers' books... These are tiny baby books... I bring my own books." Emma-Mae's re-boundaried literary solution to the books she did not like in her class was inclusionary and four-dimensional. Emma-Mae wanted more (a) books in the classroom with input from the youth, (b) trips to the public library, (c) opportunities for "reading with friends," and (d) books to listen to "on the computer." Emma-Mae had a plan for increasing literary options in her class and enjoyable time with texts. When I asked Emma-Mae if she wanted to tell her teachers how she felt, she replied, "No, they would get mad." Her plan came from the margins and would benefit everyone in her class (Crenshaw, 1989). Yet, Emma-Mae thought she would upset her teachers if she told them she wanted different books. I did not observe Ms. Taub getting mad at Emma-Mae when she made suggestions, but I did observe Ms. Snow get mad at

Emma-Mae when she asked for help, looked around the room instead of directly at the teacher, and did not have all her materials.

In Meena's case, she photographed the school library from the outside looking in. In the background were shelves of library books. Meena also took a photograph of the books in the special education classroom and chose to talk about that picture (see Figure 13).



Figure 13. Meena's photograph of the books in the special education classroom.

There were six sets of books in the classroom. Labels on the tubs indicated two sets of “fiction,” one set of “science and animals,” and one set of “sports and trucks.” Two sets were not labeled.

Meena explained,

Meena: [Points to the books in her photograph.]

ALM: Books. Lots of different books. Fiction. Science. You like reading these books here?

Meena: [Points to the books in her photograph.]

ALM: You like these?

Meena: [Nods her head YES.]

ALM: Yeah. You get to pick them and look at the pictures and read the words?

Meena: [Nods her head YES.]

Meena was fond of the books in her class. At the middle school, Meena and Emma-Mae read photocopied and stapled packets of texts during Language Arts instead of books with bindings. Meena agreed with Emma-Mae, she also wanted other books to choose from. In fact, Meena wanted access to Math, History, and Science textbooks.

In addition to varied texts, Meena had another important solution for re-boundarying. When asked about books on tape Meena said,

Meena: [Puts hand up to ear and cups ear. Nods YES.]
 ALM: While reading the book?
 Meena: [Nods YES.]
 ALM: You like it?
 Meena: [Nods YES.]

Knowing herself, Meena also felt pairing texts with learning tools, like audiobooks, would further support her as a learner and knowledge generator (Delgado Bernal, 2002). Meena felt hearing the book read to her either electronically or by another person while she was reading the book enhanced her access to texts and supported her as a reader.

In Amy's case, she took nine pictures in the library. Eight photographs contained books somewhere in the picture (see Figure 14) and four were close-up of the book shelves. During the focus group, Amy commented, "Oh the books. I borrowed the books. That's why. ((inaudible)) Check out the books. Check out the books." Amy liked to check out books from the public library with her family. Boundaried from potentially generative spaces within her own school, Amy did not have the opportunity to go to the school library on a regular basis.

When I asked Mr. Clifford if the class went to the library and checked out books he explained,

In the past we have. This year we haven't gotten around to it. Usually we typically but just, they do actually have a thing at the school district where they will let you check out a book and um, and some of our students, you know basically, may already have a library book. But at the same time, we probably want to keep it, depends on the family... the family may not want to have it at home because of, for liability of loss.

Mr. Clifford explained how he had facilitated access to the school library in years past.

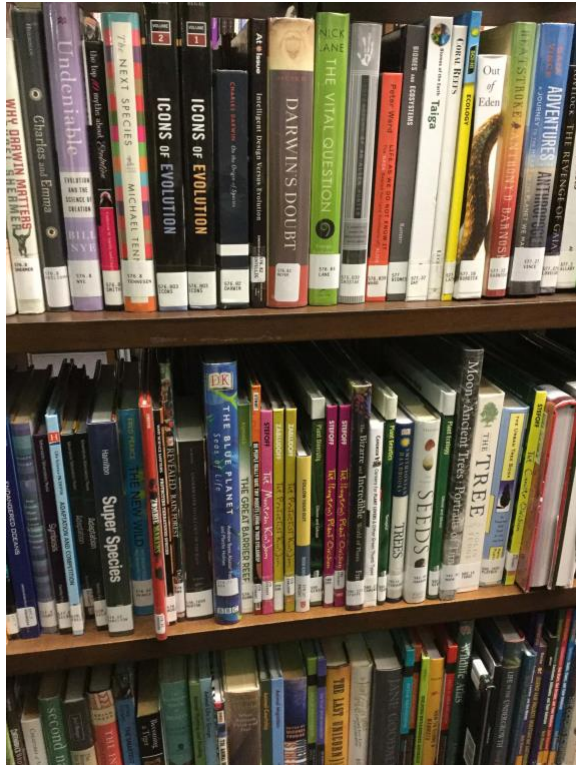


Figure 14. Amy's photograph of library books.

However, not this year. Later he commented, “we should go up there more.” Mr. Clifford believed the library was an important and generative space. However, he was engaging in exclusionary schooling mechanisms by not enabling Amy’s and Rosa’s regular access to and use of the library-based resources inside the school. In response to this debilitating (Puar, 2017) sociospatial-textual practice, Amy’s re-boundarying solutions for the library space were two-fold. First, the library needed more books that Amy was interested in reading. Second, Amy wanted additional time at the school library, including more opportunities to check out books.

Amy did not take any pictures of books in her classroom. From observation, very few books existed in the segregated special education classroom and I did not see Amy reading a book in there. In response, she employed mapmaking to reimagine a classroom full of books. She included some of her favorite literary characters in her map and drew book shelves filled with

books. In other words, texts were central to Amy's map and her learning. Through mapping, she re-boundaried the space by advocating for and purposefully placing beloved texts in her classroom map. Finally, Amy had another solution – audiobooks. Amy's mother explained, "And you know, the books have little buttons where the pictures are, and then she pushes the button and say whatever it say in the book. That is the way she reads." Reading with audiobooks afforded Amy what she needed and wanted – a chance to hold the book, see and hear the words, and then read it to herself. In these ways, interest-based audiobooks supported her learning and nurtured her strengths and gifts. This solution seemed doable at school and one she had been engaging with for years at home (Yosso, 2005).

In Jimena's case, she took three photographs of books and one of a three-shelf book case with two shelves of magazines in the special education classroom. She also took one picture of the books and book shelf in her previous self-contained special education academic assignment and one in the library of some of the shelves of books there. Jimena discussed her photographs of the books in the special education classroom. In her words,

ALM: Do you like reading this book, *Wonder*?

Jimena: [Points to *Twilight*.]

ALM: You like reading the *Twilight* books?

Jimena: [Nods her head YES.]

ALM: Yeah.

Jimena: [Nods her head YES.]

ALM: This one says *At the Beach*. Have you read that one?

Jimena: [Shakes her head NO.]

ALM: Do you wish your classroom had more books?

Jimena: [Nods her head YES.]

ALM: Yeah. I love books. There are so many good books.

Jimena: [Points to *Twilight* on the next photo album page.]

ALM: Oh, and this one is from the *Twilight* series also.

Jimena: [Nods her head YES.] Yeah.

ALM: So, you've read *Twilight* 1 and 2?

Jimena: [Nods her head YES.]

ALM: Which one did you like better?

Jimena: 2.

As Jimena discussed the other texts on the shelf, two ideas arose. First, Jimena had not read any of the other books on the shelf, only *Twilight*. Second, the classroom had limited books as Jimena captured them all in one close-up frame. As a result, Jimena re-boundaried the classroom to (a) include more books and (b) afford Jimena more time to read them.

Jimena's counternarrative also revealed several other text-based inequities. In response, she had inclusive, radical solutions (hooks, 2000, 2015). First, Jimena liked going to the school library but was afforded infrequent opportunities to do so. Therefore, she re-boundaried limited access to the school library and the text there by envisioning additional trips to her school library to check out books, magazines, and other resources. Next, Jimena's access to texts was further complicated by exclusionary mechanisms existing at the junction of learning tools and texts. First, according to Jimena's mother, one of Jimena's accommodations, as stated in her Individualized Education Program (IEP), was enlarged text. Yet, the *Twilight* books had conventional print without any adaptations to text size. Second, Jimena knew that audiobooks supported her as a knowledge generator. Therefore, Jimena ingeniously re-boundaried her access to texts with audio and print solutions.

In Rosa's case, she was particularly fond of a novel the class listened to on audio in early October. She explained,

We're learning about this book, *Esperanza*, so we're making about art... It's about this girl, Mexican, she was in Mexico. But she was poor. And she got married. Uh huh. Then, we used... We can make art about something. So, yeah.

Rosa was excited about *Esperanza Rising* and the supplemental learning activities. When I asked her why she liked the book she responded, "It reminds me of my country (where) I came from. Yeah." Rosa connected with the main character in the story because they shared commonalities. They also shared a country of origin, home language, and similar cultural practices. In this

instance, Rosa was recognized in the Language Arts content (Annamma & Morrison, 2018a; Paris, 2012). However, there was no *Esperanza Rising* book in the classroom for Rosa to hold and read to herself or read along with the audiobook. One copy of *Esperanza Rising* sat on the left side of the white board ledge near the teacher's desk as if physically out of reach. However, this did not deter Rosa from deeply connecting with the text.

During her photography session, Rosa took two pictures that contained books somewhere in the picture, both in the special education classroom. One focused on the text, *Counting with – Contando Con Frida*, which sat on the white board ledge (see Figure 15). Two months later, Rosa used her photograph of *Counting with – Contando Con Frida* as an entryway to talk about how much she enjoyed *Esperanza Rising* and in Rosa's words, "Her. Her stories. Behind her stories..." Everyone agreed that *Esperanza Rising* was an important literary work and as Rosa exclaimed, "Super good." Through her photo, the focus group envisioned several solutions.



Figure 15. Rosa's photograph of *Contando Con Frida* in the special education classroom.

First, every student should have had a book to accompany the audio of *Esperanza Rising*.

Second, Rosa's "sometimes" trips to the library needed to be more regular. Third, library books

could be brought into classroom spaces that were bare of books through library book borrowing. Fourth, she was connecting to books from her home country and in her heritage language. In other words, shifts in ideology and actions could remedy the current text fragmentation primary participants discussed at school.

In Tiffany's case, she explained some of her critical connections to texts during her first interview. She said, "I read a lot of books... There is *Twilight*. *Justin Bieber*. *One Direction* kind of books too... I have one, two... I have two books of *Twilight*." In Tiffany's words, she read a lot and texts were important. Her photographs included one picture of the free book cart outside the library and four within the school library, including the checkout desk and the complementary book marks. She also took one picture of the book shelf in Ms. Henson's room, Tiffany's homeroom assignment, a self-contained special education classroom. In conversation about her photographs in the library she explained,

I like the library because, um, everybody reads books. And the library is right here. And she (the Librarian) reads, and we go check out some books in there. And right here, next to her class, it's the free books. We can get anything we want. This cart right here. [Points to the free book cart in the picture.]

Tiffany ventured to the school library often and thought of the library as an important place. Moreover, her conceptualization of the library was radical and inclusive – "everybody read books. And the library is right here." In other words, her epistemological stance re-boundaried (Anzaldúa, 1990; Delgado Bernal, 1998; Pérez Huber 2009) the sociospatial-textual inaccessibility some of the girls in the project discussed. Tiffany told the girls who were not as familiar with the free book cart about its existence and potential (see Figure 16). She also shared its location – outside the library doors on the second floor.



Figure 16. Tiffany's photograph of the free book cart.

Even though Tiffany found ways to frequent the free book cart and appeared to be an expert at navigating the library space and checking out books, there were always more possibilities for more radical sociospatial-textual openness. Tiffany had solutions. In particular, she wanted more access to non-fiction texts for Science (e.g., Earth & Space Science, Botany, Chemistry, Human Anatomy & Physiology) and Social Studies (e.g., Civics, Human Rights Studies, World Cultures). If she could not get access to these resources in as she explained, “different classrooms,” outside the two special education classrooms she was assigned to, then she wanted the books within those spaces.

By pairing texts with a variety of electronic devices, disabled girls of color conceptualized the junctions of materializations and discursive practices with more radical openness (hooks, 2000, 2015) than was originally considered. Audiobooks could be adapted and modified based on purpose, context, community, and/or learner. Moreover, with ingenious ideas from the margins (Crenshaw, 1989), the girls’ solutions would improve everyone’s textual accessibility through audiobooks and texts readers, varied fiction and non-fiction works, and

increased access to and use of library spaces. In sum, disabled girls of color used photographs, maps, and counter-narratives “to focus on justice for themselves and others” (Annamma, 2018a, p. 9) through a sociospatial-textual dialectic (Honeyford & Zanden, 2013).

Augmentative and Accessible Communication: Resolutions for Incomplete Affordances

Girls of color with intellectual and developmental disabilities who also used augmentative and accessible communication technologies and supports discussed how they felt about the ways in which their communication modes and strategies were supported at school. While these findings were not present across all six cases, it was important to share the focal participants’ and their families’ concerns around access to augmentative and accessible communication practices and technologies and their subsequent solutions.

In three cases, disabled girls of color discussed how they did not have access to the augmentative and accessible communication technologies and supports the girls and their families wanted at school. All the girls employed rich and complex communication strategies (e.g., facial expressions, gestures, vocalizations, movements), but communication technologies and related supports were almost completely absent from their photographs and maps. Yet, each girl had suggestions how their talk and actions could be enabled, and their communicative strengths and gifts embraced at school with accessible communication supports and technologies.

For example, Amy photographed the closed door to the speech-language pathologist’s office (see Figure 17). She explained,

Amy: The door.

ALM: The lady, Speech teacher. Ms. Ramona, the Speech teacher, is that her office?

Amy: Yeah... Mrs. Ramona

ALM: Yeah, the Speech lady, right?

Amy: Yeah.

ALM: Yeah. Do you wish you could be there more?

Amy: Yeah.



Figure 17. Amy's photograph of the closed door to the speech-language office.

Amy was bilingual in Spanish and English. She explained, “I speak with my voice. Yeah. Yeah.”

In fact, Amy moved fluidly between English and Spanish often with friends and family.

Considering texts, Amy preferred reading in English. With her photograph, Amy expressed how she wanted to have more speech services. Amy’s mother also sought out these services and supports for Amy. She said, “I’m always asking about learning and her speech. I’m always asking for more speech, because the speech that she’s getting is not that much and I don’t think that’s going to help a lot. That is my concern. Her speech.” In fact, Amy’s mother requested additional speech services at IEP meetings, but her requests were not granted. Despite these yearly denials, Amy and her mother would continue to request the supports they felt would best build on Amy’s strengths at school while encouraging Amy’s multilingualism at home.

Jimena used a Dynavox, a speech generating device, in elementary and middle school and was interested in using one again. When I inquired if she like using it she said,

Jimena: [Nods her head YES.]
 ALM: Do you wish you used it more?
 Jimena: [Nods her head YES.]
 ALM: Do you wish it was at school?
 Jimena: [Nods her head YES.]
 ALM: It helps you at school?
 Jimena: [Nods her head YES.]
 ALM: Ok. So, we gotta figure out how to get it to school?
 Jimena: [Nods her head YES.]

Jimena wanted additional supports that would augment her already ingenuous discursive practices. She had used a Dynavox until her previous special education teacher told her mom that Jimena wanted to rely only on her talk. In contrast, Jimena and her mom felt accessible communication technologies (e.g., communication board, speech generating device) supported Jimena as she shared her thoughts and constructed innovative ideas. Jimena's solution was to strengthen her multilingualism with another high-tech speech generating device.

Ms. Randle explained that Amy and Jimena received "20 minutes of group Speech once a week." In response to a question about how high school special education teachers collaborated with critical resources at the school, such as speech-language pathologists, English teachers, and Heritage Language teachers, to cultivate students' multilingualism Ms. Randle said,

Ms. Randle: But, see, kids with disabilities aren't allowed to be bilingual. Just like they're not allowed to have mental health issues.
 ALM: So, when you say that, you mean this school doesn't, that you have to choose between special education services or English Language services?
 Ms. Randle: Mm hm. I assume that's how it is in all schools. Once you reach a certain level of disability, you're just not given the luxury of being considered anything else.

Ms. Randle explained how the school district had positioned girls of color, their families, and their teachers to believe that if a student had particular disability labels (e.g., autism, intellectual disability, multiple disabilities), then neither she, her family, nor her teachers could request other educational services and supports. In this regard, educational services and supports included academic assignment in the school's Spanish for Heritage Language Learners classes or English

as a Second Language classes. These practices were exclusionary as they failed to represent the girls and their families in decisions that most impacted them and recognize the girls' discursive strengths and gifts.

In Meena's case, her augmentative and accessible communication technologies consisted of a YES/NO card and an iPad with speech generating software. The YES/NO card was printed on green cardstock and had (a) YES and NO written on it, (b) a ? and the words "question mark," (c) a . and the word "period," and (d) the words "capitalize first letter." The YES/NO card was employed during the Daily Language Review lesson and then collected and placed in the hand-in-basket with the Daily Language Review packets. This action positioned the YES/NO card as a worksheet, not as a communication tool. Meena also had an iPad with speech generating software programmed on it. When I asked if she used her iPad communication device in class often, she replied,

Meena: [Shakes her head NO.]

ALM: No, not yet, huh? You used it with the Speech teacher?

Meena: [Nods her head YES.]

ALM: Yeah. But do you use it with Ms. Taub?

Meena: [Nods her head YES.]

ALM: Sometimes? Yeah?

Meena: [Nods her head YES.]

ALM: Ok great. And Ms. Snow? Do you also use this when she's teaching?

Meena: [Shakes her head NO.]

ALM: Not so much. Ok. Ok. So, do you think this helps you?

Meena: [Nods her head YES.]

As Meena described, her iPad communication device was used inconsistently in the classroom.

Ms. Taub confirmed, "Her iPad, yes. We have really not utilized it in here (the self-contained special education classroom)." She added, "I would like to learn more about the program. I don't feel super comfortable about the actual program so it's hard for me to incorporate it." Ms. Taub felt unsure and unprepared to use the speech generating program to support Meena's

communication. This made her reluctant to engage with the program and as a result, she leaned on the YES/NO card for the Daily Language Review lesson. Ms. Taub also felt she was all alone in thinking about augmentative and accessible communication technologies. She explained, “Oh, well, that's, for sure (I am on my own). Maybe some, like, I don't even know what to ask for a lot of times at this point, especially with her (Meena). But even if we do (ask for something), we don't get it, so.” In addition to feeling all alone, not knowing what to ask for and not receiving what was requested exacerbated the complexities of supporting Meena’s multilingual strengths and gifts. Thus, a combination of factors negatively impacted Meena’s access to and use of augmentative and accessible communication technologies and supports.

As discussed, Meena was interested in using an iPad for academics and as seen above, thought that the iPad as a speech generating device was helpful. However, her special education teachers were not facilitating the use of the speech generating device and Mr. Fenn, the Theater teacher, did not know the device existed when I asked him about it in mid-December. Moreover, the device was never actually fit to Meena and her family was not involved in the assessment process but instead were presented with a generic solution. As discussed in the previous cafeteria section, Meena was pairing facial expressions, head movements, gestures, and objects with sign language with her friends. In other words, Meena was radicalizing and transforming her multilingualism in response to the school’s absent supports. However, it was unfair of the school to ask Meena to do this labor on her own. The school needed to notice her linguistic gifts and afford Meena and her family opportunities to try augmentative and accessible communication supports and tools consistently, including sign language and speech generating devices, to find what fit her and her family best (Soto & Yu, 2014).

In three cases, disabled girls of color and their families discussed how schools were not facilitating rich and meaningful access to augmentative and accessible communication supports and tools. In response, the girls and their families had solutions to the institutional barriers that prevented their full communicative strengths and gifts to be realized at school.

Conclusion

In this chapter, I presented findings in three parts. First, I addressed how inclusionary and exclusionary schooling mechanisms were generated through materializations (e.g., broader school geographies, classroom layouts, learning tools). Across cases, girls of color with intellectual and developmental disabilities used photographs and maps to tell how school spaces (e.g., hallways, doors, wheelchair ramp, stairs, lockers) held meaning. Their narratives revealed how broader school spaces were fraught with adult presence and surveillance under the rhetorical guise of support. In response, disabled girls of color found subtle ways to reclaim their freedoms (e.g., storing items in personal locker spaces, passing by peers in the hallways).

Through photographs, maps, and counter-narratives, girls of color with intellectual and developmental disabilities revealed the ways classroom layouts either positioned them as knowledge generators (Delgado Bernal, 2002) or dismissed them. Classroom layouts were typically designed from the teacher's perspective and coincidentally, some girls sat or stood where they wanted to in the classroom. However, even in classes the girls enjoyed, they could be positioned on the margin, far from peers and social opportunities. That said, focal participants revealed how social and spatial processes operated in tandem to include or exclude them.

The photographs, maps, and counter-narratives of disabled girls of color also revealed how learning tools (e.g., writing tools, electronic devices, and software programs) were withheld from the girls through a sociospatial dialectic (Soja, 1980, 2010). For some girls, learning tools

were policed or not made available at all. In contrast, learning tools were afforded to the girls' peers without disability labels. In response, disabled girls of color cited solutions, including accessing and using the learning tools that valued and augmenting with learning tools as needed.

Then I addressed how inclusionary and exclusionary schooling mechanisms were generated through discursive practices, focused on talk and actions. Critical discourse analysis (Gee, 2011; R. H. Jones, 2014; Rogers, 2011) revealed how disabled girls of color initiated with their teachers through talk and actions about their ongoing work and completed work. When their teachers responded, they used questions and affirmations. Interactions about ongoing work resulted in more turns exchanged between teacher and focal participant, particularly when the teacher asked her questions. Across cases, teachers often claimed discursive power within the turn sequences through their talk and actions. Not all teachers responded to the girls' initiations. When this occurred, no power shifted to the girl initiating.

When girls of color with intellectual and developmental disabilities asked questions and made requests, teachers responded by asking and answering questions, affirming, or directing. At times, teachers made assumptions about or interrupted before the focal participant could complete her initiation. Other times, the teacher missed the girl's initiation. Missing initiations were particularly salient for one participant as the teacher did not take up any of her initiations across five observations. Moreover, teachers did not draw on the girls' initiations and as a result, deeper knowledge was not constructed through the turn sequences.

Critical discourse analysis also revealed how across cases, girls of color with intellectual and developmental disabilities repositioned (Davies & Harré, 1990) in response to marginalization through talk and action by making self-governed choices. Teachers responded with directives, questions, and interruptions. Focal participants had few opportunities to exert

choice and preference in learning activities. Thus, it was important to notice when disabled girls of color engaged in nuanced moves and if or how they were afforded subtle and brief power.

Finally, I addressed how materializations and discursive practices connected from the girls' perspectives, focused specifically on texts and learning tools as well as augmentative and accessible communication technologies. Across cases, girls of color with intellectual and developmental disabilities expressed the importance of texts to their school trajectories. Yet, most participants had disparate access to texts. In response, disabled girls of color re-boundaried their textual access across spaces and in conjunction with learning tools as audiobooks. In addition, disabled girls of color discussed how they did not have access to the augmentative and accessible communication technologies and supports the girls and their families wanted at school. This was salient in all three cases wherein disabled girls of color employed multimodal, multilingual communication strategies to convey their learning and socialize at school without the tools and supports requested.

Chapter 5: Discussion

The purpose of this dissertation was to better understand the experiences of girls of color with intellectual and developmental disabilities in middle school and high school to learn from them and improve education for girls of color receiving special education services and supports. Grounding the study in a humanizing research stance (Paris & Winn, 2014a) allowed me to put systems in place to maintain my axiological and paradigmatic commitments to the girls and their teachers. Conceptualizing this project through DisCrit (Annamma et al., 2013) and sociocultural theory (Lave & Wenger, 1991; Lewis et al., 2007; Rogoff, 2003; Shweder, 1990; Vygotsky, 1978) allowed me to examine how inclusionary and exclusionary schooling mechanisms were generated through materializations (e.g., processes that result in school geographies, classroom layouts, learning tools) and discursive practices (e.g., talk, texts, actions) for girls of color with intellectual and developmental disabilities. This blended framing also permitted me to uncover how schools and teachers honored disabled girls of color as holders and generators of knowledge (Delgado Bernal, 2002; Paris & Winn, 2014a), as well as the girls' resultant solutions and creative strategies of resistance (Annamma, 2018b; Davies & Harré, 1990; Pérez Huber, 2009) when they encountered exclusionary schooling mechanisms.

This empirical project was only possible because of collaborative relationships with the students and teachers at Frida Kahlo High School and Bessie Smith Middle School. To illuminate the schooling experiences of girls of color with intellectual and developmental disabilities, I organized the findings respective to the two empirical research questions. In addition, a third section examines the interconnectedness of discursive practices and tools. Then, I offer limitations of the current study and implications for pedagogy and future research.

Schooling Mechanisms Generated Through Materializations

This study began by asking: *How are inclusionary and exclusionary schooling mechanisms generated through materializations (e.g., processes that result in school geographies, classroom layouts, learning tools) for girls of color with intellectual and developmental disabilities?* The photographs, maps, and counter-narratives—all of which are often untold stories spoken from the margins that challenge the stories of those most powerful (Delgado, 1993; Delgado Bernal, 2002; Solórzano & Yosso, 2001)—of disabled girls of color exposed how academic and social opportunities were constrained or afforded by a sociospatial dialectic (Harvey, 2009; Lefebvre, 1991; Soja, 1980, 2010) operating in tandem with intersectional individual and societal marginalizations. In this section, I discuss the findings from the study's first question in relation to existing literature. I explore materializations as broader school geographies as doors, hallways, stairs, lockers, wheelchair ramp, and the cafeteria. Then, I discuss classroom layouts. Finally, I explore a variety of learning tools (e.g., writing tools, electronic devices, Art-specific tools, absent tools).

Structures Within the Broader School Geographies: Limited Access and Subtle Freedoms

In order to interrogate the structures within, I define the broader school geography as the places in the school where youth learn and socialize. These broader geographies were identified by the focal participants (e.g., classes locations in relation to one another, main doors, hallways, wheelchair ramp, stairs, lockers) who took photographs and drew maps of the places in school that held them as knowers and doers.

Segregation and academic assignment. The highest number of general education academic assignments in one semester was three classes for one high schooler, compared to seven or eight for her peers without disability labels (see Table 6).

Table 6

Participant's General Education Academic Assignments

Participant	Number of general education academic assignments	Name of class
Amy	0	NA
Emma-Mae	2	PE Theater
Jimena	1	Choir
Meena	2	Art Theater
Rosa	0	NA
Tiffany	3	Art Forms Choir Jewelry

Girls of color with intellectual and developmental disabilities did not take photographs of any core content classes (e.g., Language Arts, Mathematics, Science, Social Studies) as no disabled girl of color participating in this project was assigned to a core content general education classroom. Two focal participants did not have access to any general education academic assignments, including Electives classes (e.g., Art, Music, PE). Moreover, three of the six focal participants spent most of their school day in a separate locked building apart from the main school building. This separate building was termed “the annex” by school staff but was not labeled as such on the school map or on the building itself. Further, the students did not refer to the building as the annex resulting in a discursive-spatial uncertainty as to where their classrooms were located in the school.

These findings align with existing scholarship wherein youth with intellectual and developmental disabilities (Kurth et al., 2014; Morningstar & Kurth, 2017), youth who use

augmentative and alternative communication (Kleinert et al., 2015), and youth of color with intellectual and developmental disabilities (Blanchett et al., 2009; de Valenzuela et al., 2006; Fierros & Conroy, 2002) are more likely to experience segregation in special education classrooms. The girls' limited academic assignments were reflected in their photographs, maps, and counter-narratives. This finding adds to that literature as school segregation was representative of the school experiences of girls of color with intellectual and developmental disabilities specifically, resulting in fewer experiences within the broader school geography.

The sociocultural context wherein school spaces are socially produced to include or exclude youth of color with intellectual and developmental disabilities (Erevelles, 2002; Kitchin, 1998) was revealed with reference to broader school geographies. While the girls felt broader school spaces (e.g., hallways, stairs) valued them, the exclusionary mechanisms that were reproduced through the ideology and spatiality of segregation did not. Rather, excluding and segregating operated as mechanisms espoused by ableism, racism, and white supremacy which positioned the girls as less than and different (Annamma et al., 2013) and thus, in need of remediation. This positioning held negative academic, social, and material consequences (Annamma et al., 2013; Erevelles, 2011b; J. Morris, 2001) for their day-to-day school experiences as they did not have rich and meaningful academic and social opportunities within the broader school geography. This may be one reason why youth of color with intellectual and developmental disabilities are underrepresented in academic measures (e.g., mathematics and literacy tests scores; Wagner et al., 2006) and academic outputs (e.g., postsecondary educational opportunities; Baer et al., 2003; Bouck, 2012; Think College, 2015). Girls of color with intellectual and developmental disabilities in this study were underrepresented in academic

measures and outputs because of this positioning as not capable and in need of remediation as evidenced by teacher discourse on what they could and could not do.

Adult presence and surveillance. The girls' photographs, maps, and counter-narratives revealed how their self-contained special education academic assignments resulted in increased adult presence and surveillance within the broader school spaces from entry to exit. Across all six cases, girls experienced assorted forms of adult presence from the moment they arrived at school (e.g., surveillance cameras, police officers, adult escorts), across the school day (e.g., adult escorts, traveling only with students assigned to the special education classroom), and then at the end of the day (e.g., surveillance cameras, police officers, adult escorts). This finding supports the current literature wherein special education labeling operated as an exclusionary schooling mechanism (Cowley, 2013; Petersen, 2009a, 2009b) resulting in more frequent surveillance than assignment in general education classrooms without special education labeling. Girls of color with intellectual disabilities were not protected by their disability label and were indeed overpoliced throughout the school day.

For disabled girls of color, social and spatial processes held messages about whose knowledge had power through the practices of restricting travel in the school. The sociospatial, material, and ideological consequences of such messaging meant that disabled girls of color experienced limited freedoms within the brick and mortar walls of schooling. Further, these findings are commensurate with prior research wherein youth mapped mechanisms of surveillance and adult presence resulting in limited freedoms in youth prisons (Annamma, 2016, 2017, 2018a, 2018b), high schools (Krueger-Henney, 2015; Schmidt, 2015; Thomson, 2007), and community spaces (Rubel et al., 2016). This study adds to that literature specifically for girls

of color with intellectual and developmental disabilities noting that they did experience surveillance at school but under a rhetorical guise of supporting them.

Doors, hallways, and stairs. In addition, photographs, maps, and counter-narratives revealed how doors, hallways, and stairs were situated as conduits for travel from place to place; rather than as conduits *and* as places of sociality (Kurth et al., 2016). Disabled girls of color did not transition to academic assignments throughout the school day with their peers nor were they allowed to linger in the hallways without near-adult presence like youth often do during passing periods (Tupper et al., 2008). This finding supports the current literature as few opportunities existed for the girls to experience incidental social opportunities with peers outside of the other students also assigned to the special education classroom (Caetano, 2014). That said, adult discourse and action, such as chaperoning or escorting the girls across school spaces, intersected with spatial processes and the girls missed opportunities within hallway spaces to spend time with peers (Kurth et al., 2016). This finding adds to the literature specifically for girls of color with intellectual and developmental disabilities because this surveillance was socially debilitating (Puar, 2017), wherein social opportunities within the broader school geographies were withheld from girls of color with intellectual and developmental disabilities while afforded to their peers without disability labels.

Limited freedoms. Simultaneously, the girls' experiences were not binary (Delgado Bernal, 1998), only revealing good school spaces or bad school spaces. Rather school spaces and the meanings the girls assigned to the spaces ebbed and flowed. Primary participants found ways to balance their limited freedoms by seeking out spaces that they enjoyed or found more enabling, a process wherein circumstances allowed access and opportunity for learning, sharing knowledge, and developing relationships. In other words, disabled girls of color illuminated how

spaces in the school were important to them, including the wheelchair ramp, hallways, stairs, and lockers, despite surveillance by adults. For example, the wheelchair ramp at the high school created accessibility across the first floor of the high school. Concurrently, the short flight of stairs to and from the high school cafeteria was a familiar place that held social possibility to quickly chat with peers as the girls' class passed students standing and sitting on the stairs. In addition, girls who had access to lockers at both schools were fond of them as unique and personal places to store their own materials. In these ways, focal participants strategically resisted their limited access within the two schools by focusing on the good things (e.g., social opportunities on stairs, hallway posters she enjoyed reading, lockers for storing personal items) within the surveilled passageways. This is essential to note because students with intellectual and developmental disabilities are often imagined as incapable of creative thinking (A. Taylor, 2018; Brown et al., 2017), but this finding illustrates that girls of color with intellectual and developmental disabilities were indeed strategic about the ways they resisted through the spaces they navigated.

Generative solutions. Girls of color with intellectual and developmental disabilities also reimagined (Annamma, 2018b; hooks, 2000, 2015) their sociospatial realities—which included thinking expansively beyond everyday school practices—generating solutions to limited academic assignments. Through their photographs, maps, and counter-narratives, they described the academic assignments and content they desired. For instance, focal participants discussed wanting general education assignment in Electives classes such as Band, Computer Sciences, Photography, and Graphic Design. Some focal participants were also interested in assignment in academic core content general education classes such as Language Arts, Mathematics (e.g., Algebra, Geometry), Chemistry, and Earth and Space Science. Other times girls expressed

wanting more Language Arts, Mathematics, Social Studies, and Science without denoting spatial requirements as to where these learning opportunities should occur. Ultimately, I found that girls of color with intellectual and developmental disabilities felt they were not being challenged and wanted more academic engagement in and outside of special education.

Methodological contributions. Methodologically, one contribution of this study is to demonstrate ways photography and mapping center youth in critical participatory scholarship. Recent photovoice projects have focused on the school experiences of girls of color with intellectual and developmental disabilities and how the girls retheorized deficit-laden perspectives of race, disability, and gender and spoke out against segregated schooling practices (de Lange et al., 2016; Nguyen, 2016). The extant literature exhibits the promise for additional critical participatory scholarship with disabled girls of color. This study offers insight into the ways photovoice can be employed when examining broader school geographies with girls of color with intellectual and developmental disabilities. From a participatory stance, cameras (e.g., digital camera, iPad) operated as perspective-mining tools that, when combined with the girls' analyses of their photographs, afforded access to their deep and nuanced experiences across broader school geographies that words alone may not have afforded (Winton, 2016).

Further, this study expands extant literature as scholars have invited girls of color (Krueger-Henney 2013, 2015; Rubel et al., 2016) and girls of color with emotional disabilities (Annamma, 2013, 2014, 2016, 2018a, 2018b) to examine space, power, and injustice through cartography (e.g., Education Journey Maps; Annamma, 2013) with an emphasis on girls of color with intellectual and developmental disabilities. Despite societal assumptions about their intelligence, focal participants used cartography with photography to envision the connectedness of spaces in school that were geographically separate, revealing a sociospatial dialectic (Harvey,

2009; Soja, 1980, 2010). Disabled girls of color also employed photos and maps to reimagine what learning tools and texts (discussed later) they wanted and needed across the broader school geographies, including within specific academic assignments. Therefore, photography and mapping centered the girls' perspectives as "one way to rupture notions of normalcy in research" (Annamma, 2018a, p. 20). This adds to the extant photography and cartography research with youth with particular focus on (a) the school experiences of girls of color with intellectual and developmental disabilities and (b) the girls' educational solutions.

School cafeterias. The majority of disabled girls of color cited the cafeteria as a key place for sociality at school with peers who they did not have classes with throughout the day. For one participant, the cafeteria was not a place of sociality because of her ongoing punishment, which resulted in restricted and surveilled seating. In both cases, the cafeteria played a significant role in broader school geographies.

Like other broader school geographies, within the cafeteria, girls experienced surveillance and control. This finding supports the existing literature on exclusionary schooling mechanisms as adults dictated where and with whom girls of color with intellectual and developmental disabilities could sit by at lunch (Gabel et al., 2013). The girls who could sit by their peers engaged socially in the cafeteria within the surveillance. For example, one girl code meshed, which is blending and merging dialects (Young, 2010), with peers and another sat with her peers amongst adult presence. Other girls resisted (Cowley, 2013; Petersen, 2009b) adult presence. For example, two girls sat at other tables with their friends during lunch purposefully moving away from adult surveillance. They also moved to another area of the cafeteria with friends and stood there away from the group when they were finished eating. Though these actions may appear small, given the insistence by adults that the student stay with them under the

guise of support, girls of color with intellectual and developmental disabilities were radically altering their social and spatial lives by refusing this surveillance and control.

These findings are also commensurate with the literature on how exclusionary schooling mechanisms are generated through the limited social opportunities for youth with intellectual and developmental disabilities due to segregated academic assignments (e.g., eating lunch in the self-contained classroom or at different time periods; Kurth et al., 2016; Ward, 2008-2009). Moreover, the talk and learning in the general and special education classrooms in this study was often teacher-driven and focal participants had few opportunities to engage in talk and action with peers, including collaborative learning during core class time. This finding adds to the literature specifically for disabled girls of color noting that even when they eat lunch at the same time as their peers without disability labels and in the same space (e.g., school cafeteria), they continue to experience surveillance and adult presence as their teachers sit with them, influencing where they can sit and whom they can eat with.

Lastly, the cafeteria supervision was even more extreme for the youngest Black girl with intellectual and developmental disabilities participating in the project as she was hyper-surveilled, or watched more closely (Annamma et al., 2016; Wun, 2016b) than her peers with and without disability labels, and pushed out (Crenshaw et al., 2015) of any social opportunity in the cafeteria. She was assigned to a lunch period with students two grades older than her and required to engage in a socializing practice, a routinized process that focused on control and compliance (Annamma, 2014) of eating in isolation. This disabled Black girl had to sit by herself every day during lunch for more than three months. This isolated lunch was a shared punitive decision between administrators and homeroom teachers based on this young Black girl's nonviolent behaviors. Also, the practices were additionally punitive as all other students in the

cafeteria sat with their peers while she was not granted the opportunity. This finding aligns with prior scholarship focused on the hyper-surveillance of young Black bodies in schools (Annamma et al., 2016; Blake et al., 2011; Epstein et al., 2017; Wun, 2016b, 2018). This study expands that scholarship by illustrating that the school-imposed disability labels of intellectual disability and speech/language impairment did not protect this Black girl from hyper-surveillance and hyper-punishment. In fact, the disability labeling and diagnoses of nonviolent behaviors as out of control and noncompliant were actually a rationale for keeping her isolated.

Ultimately, this study illustrated how girls of color with intellectual and developmental disabilities were restricted from the broader school geography and had limited access to general education classroom assignments, hallways, stairs, and lockers. The surveillance that the girls experienced throughout the day were also present in the school cafeteria and most restrictive for the youngest Black disabled girl participating in the study. This resulted in limited freedoms and academic and social experiences across the school day. These findings are important because these restrictions impacted the girls' experiences at school by withholding academic and social opportunities from them while affording such experiences to their peers without disability labels. In addition, the girls exposed how their experiences were dynamic rather than static and they found subtle imperfect freedoms within the surveillance and adult presence.

Classroom Layouts

Through photographs, maps, and counter-narratives, girls of color with intellectual and developmental disabilities discussed the nuances of classroom layouts. A classroom layout includes the size of a room, arrangement of furniture, and access to storage as well as colors, sounds, and lights present in the space. The findings are consistent with prior research and extend present knowledge.

First, most participating teachers designed student seating within the classroom layout based on spatial need (e.g., more space to walk around the classroom), procedural convenience (e.g., student roster), or student learning need (e.g., pair students for helper roles, make sure students can see the board; Naraian, 2016). They did not inquire with the girls where they preferred sitting. Some girls wanted to sit in what was considered the front of the classroom layout and coincidentally, some did sit in the front. One girl wanted to sit on the periphery of the classroom layout and was afforded the opportunity. That said, only one of six focal participants consistently chose where she sat in the academic assignments included in this study. She discussed her preferences and through photography elaborated on the significance of her physical and social situatedness within classroom layouts. It was clear that the girls were not considered learning partners and rarely asked for their input in where they sat or how they engaged.

Second, classroom layouts were not designed to foster a community of learners (Lave & Wenger, 1991; Wenger, 1998) or facilitate collaborative work amongst students (Kilbourne, Scott-Webber, & Kapitula, 2017; Lancaster, 2014; Soukup et al., 2007). This finding connects to extant research in which collaborative groupwork, community-building activities, or establishing connections with peers was not frequently observed in self-contained special education classrooms (Caetano, 2014; Pennington & Courtade, 2015). Contrasting recent scholarship, no focal participants sat in individual study cubicles without full view of the space (Causton-Theoharis et al., 2011).

This study adds to the critical spatial literature in educational research (Annamma, 2018a; Armstrong, 2007; Erevelles, 2011a; Naraian, 2016; Thomson, 2007) by revealing how classroom layouts can foster spatial exclusion in general education and special education academic assignment, complicating the notion of a continuum of services and supports (S. J. Taylor, 2004).

When girls of color with intellectual and developmental disabilities were pushed to the margins of the classroom layouts or asked to sit where they did not feel they learned best, this positioning delivered messages about who was good and smart. This positioning also communicated how relationships were not valued in the classroom (Hunt, McDonnell, & Crockett, 2012) because the girls and their sociality were not considered in the arrangement.

Furthermore, when a disabled girl of color was assigned to a general education classroom, this academic assignment did not effortlessly equate with an inclusionary schooling mechanism. As Rix and colleagues (2015) articulated, recognizing a general education classroom as one end of the continuum or inclusive “does not stop the provision from being exclusionary or restrictive” (p. 331). Consequently, disabled girls of color may have appeared to be “included” but may actually have not been due to how they were academically, physically, and socially positioned within the classroom layout. For example, one girl’s wheelchair was repeatedly situated behind the general education teacher and accompanying pianist during Choir class and no peers were within discursive range. As ableism and racism operated in subtle and covert ways (Annamma et al., 2013), this positioning, rooted in ideology, gave preference to certain bodies and abilities over the focal participant’s – hence, what is commonly thought of as an inclusionary schooling mechanism (bringing disabled students into a general education classroom) shifted to an exclusionary one for a girl of color with multiple disabilities. In sum, this study illustrated the layered complexities and “the shaped and shaping forces of both the material and the discursive in sociopolitical relations” (S. Jones et al., 2016, p. 1129) that were alive within classroom layouts, particular for girls of color with intellectual and developmental disabilities.

Learning Tools

Through photographs, maps, and counter-narratives, girls of color with intellectual and developmental disabilities discussed the learning tools they preferred using, those they did not have access to, and their solutions for these discrepancies. Across all six cases, girls of color with intellectual and developmental disabilities often did not have access to a range of preferred learning tools in academic assignments. In this section, I describe writing tools, electronic devices, and software programs, and finally, absent tools.

Writing tools. While writing tools were common learning tools in the girls' academic assignments, some girls did not have a chance to use the writing tools that best suited them. In nuanced ways, writing tools operated as exclusionary mechanisms when disabled girls of color had to use writing tools they did not like or that did not help them learn. For some girls this meant having choices and the opportunity to choose their writing tools (e.g., pen or pencil, marker or pencil) or accessible technologies to augment writing (e.g., iPad, talk to text accessibility). For one participant with multiple disabilities this meant that her hand became sore from writing with a pencil for so long. This finding contributes to the existing literature on the lack of opportunities for choice-making for youth with intellectual and developmental disabilities (Agran et al., 2010) and the dearth of choice-making research focused on disabled girls of color (Wehmeyer & Abery, 2013). Specifically, the limited access to writing tools that disabled girls of color had constrained their learning and voice in the classroom. This finding is essential because it illustrates how choice-making is restricted for disabled girls of color.

Writing tools also delivered subtle messages about who had power and who was good and smart (Broderick & Leonardo, 2016) when teachers controlled the writing tools by placing them out of reach or by not making them available at all. In sum, focal participants could not

readily access or choose the writing tool they felt best fit them as a learner (Delgado Bernal, 2002). Consequently, this study also contributes to the literature on power materialized through learning tools (Caetano, 2014; Thiel & Jones, 2017), specifically for disabled girls of color. Withholding learning tools did not give disabled girls of color the power to choose what writing tools best supported their learning.

Electronic devices. In this study, electronic devices (e.g., laptops, tablets), for academic learning opportunities were often not available for girls of color with intellectual and developmental disabilities, although the school district assigned one electronic device to each student. For disabled girls of color, electronic devices became property owned by whiteness and ability (Annamma et al., 2013) positioning the girls as not worthy of such learning tools because they were different from the desired norm. In fact, one disabled girl of color never had a school district-assigned device because the white special education teacher deemed it unnecessary. Focal participants did not use electronic devices to write stories (Joseph & Konrad, 2009) or access information for research projects. Disabled girls of color did not use electronic devices to augment Social Studies and Science content learning. In most cases, disabled girls of color were also not utilizing electronic devices to cultivate their skills and strengths in Language Arts and Mathematics (e.g., Alper & Raharinirina, 2006). In three of four cases at the high school, focal participants were also not afforded access to electronic devices to build social networks online, engage in web-based learning ecologies, or prepare for or explore postsecondary opportunities (e.g., complete college applications, cultivate computer science skills). This lack of access to electronic devices was significant because other youth (disabled males of color and youth without disability labels) did get to use them daily; hence identity mattered in who was constructed as having the potential to learn from electronic devices.

This is not to say that technology is the alternative to more meaningful social change (Sheldon, 2004). However, focal participants shared that electronic devices were a significant component in their lives, including at home, in their communities, and when they were with their friends at school. When meaningful opportunities to use electronic devices were constrained for girls of color with intellectual and developmental disabilities but afforded to their peers, then electronic devices operated as exclusionary mechanisms. Moreover, without access to and practice with electronic devices, girls of color with intellectual and developmental disabilities cannot generate innovative accessibility strategies (Alfredsson Ågren, Kjellberg, & Hemmingsson, 2018), strategies they employ to navigate the digital environment and take part in Internet activities. This finding extends the research on how the digital divide and lack of Internet access negatively impacts youth of color (Gordo, 2003; Kalyanpur & Kirmani, 2005) and youth (of color) with intellectual and developmental disabilities (Burgstahler, 2002; Tanis et al., 2012) with a specific focus on the negative impact on girls of color with intellectual and developmental disabilities and their resultant solutions.

Computer programs. In addition, two focal participants discussed how software programs operated as exclusionary schooling mechanisms. One program was a preK-3 Mathematics website (Starfall) used in a high school self-contained special education classroom. In another case, the focal participant at the middle school was required to identify early Math concepts (e.g., shapes, colors) using Studyladder. In both cases, disabled girls of color were candid that they did not like these programs and the programs were not helping them learn. Notably, the use of these software programs mirrored the maintenance of the developmental model, an exclusionary mechanism, wherein youth with intellectual and developmental disabilities are required to move along a set of predetermined “skills and activities for students

not following the same course of study as their peers in general education” (Trela & Jimenez, 2013, p. 118) academic assignments. The practice dictates that if a student does not advance along the sequence of set skills at an arbitrary rate, then they are required to continue studying or practicing the same skills (S. J. Taylor, 2004).

As a result, solutions were generated from conversations with the focal participants pertaining to how software programs could be more inclusionary. In other words, the input of disabled girls of color was one mediating factor in moving a software program that operated in exclusionary ways to be one that was more inclusionary. This finding extends the current literature by exemplifying how ableism, racism, and sexism (Annamma et al., 2013) intersected with the developmental model (Trela & Jimenez, 2013) as disabled girls of color were required to use computer programs that did not help them learn and instead practiced the same skills (e.g., identifying shapes, telling time, sorting), sometimes for several consecutive years.

When focal participants had access to the learning tools that best suited them, then the same learning tools that were exclusionary operated as inclusionary schooling mechanisms. For example, in one case, a participant had immediate access to her school-assigned electronic device throughout the day. She used this laptop for school (e.g., accessing Google Classroom, typing notes, searching the Internet) and personal reasons (e.g., storing photographs) and also paired the laptop with her phone. She also discussed the learning tools she used in her Art classes including wire tools, beading tools, and Art mediums (e.g., clay, homemade paper, beads). In these ways, access to varied learning tools positioned this disabled girl of color as a knowledge generator (Delgado Bernal, 2002) and upheld her strengths and gifts (Annamma & Morrison, 2018a; Du Bois, 1924). This finding adds to critical spatial scholarship in education (Annamma, 2018a; Thomson, 2007) by uncovering how the same tools function as inclusionary or

exclusionary schooling mechanisms for disabled girls of color. Consequently, it was less about the type of tool (e.g., writing versus electronic) or the space (e.g., general versus special education), and more about the processes that occurred around their use.

Absent tools. Prior literature has discussed how girls of color with intellectual and developmental disabilities in middle school liked using manipulatives as Math tools (Browder et al., 2018) and young disabled girls of color have expressed enjoying inquiry-based games as Science tools (B. R. Smith et al., 2013). Notably, girls of color with intellectual and developmental disabilities participating in this project rarely photographed Math- and Science-specific learning tools in response to the photovoice prompts nor did they include said tools in their maps. This finding of absent tools may animate the statistics as academic measures of girls with disabilities (Blackorby et al., 2005) and youth of color with intellectual and developmental disabilities (Wagner et al., 2006) are underrepresented in high test scores in Mathematics content knowledge. Yet, more research is needed to understand the Math and Science experiences of disabled girls of color. These findings contribute to the extant research as focal participants did not have consistent and ready access to Math- and Science-specific learning tools, limiting access to that which helped them learn.

Ultimately, this study illustrated how girls of color with intellectual and developmental disabilities had limited access to an array of tools (e.g., writing, electronic devices, computer programs, and Math- and Science-specific). This limited access to learning tools constrained the girls' academic and social school experiences. Moreover, this lack of access was significant because other youth (youth without disability labels and some disabled males of color) did get to use school-assigned electronic devices daily. Thus, identity did matter as learning tools held

messages about who was good and smart. Furthermore, disabled girls of color offered resolutions to remedy how learning tools were generating exclusionary schooling mechanisms.

Schooling Mechanisms Generated Through Discursive Practices

In this section, I discuss findings from the second research question: *How are inclusionary and exclusionary schooling mechanisms generated through discursive practices (e.g., talk, texts, actions) for girls of color with intellectual and developmental disabilities?* The three most common participation structures in general education and special education classrooms were teacher-led, including teacher directives to the whole class (including the focal participant), teacher-led initiations with the focal participants, and IRE sequences (Cazden, 2001; Mehan, 1979). These findings correspond to prior research wherein teacher talk was more frequent than student talk (Boyd & Rubin, 2002) and the most common participation structures in self-contained special education classrooms, including talk and actions in small groups, were teacher-led (Causton-Theoharis et al., 2011; Kurth et al., 2016; Pennington & Courtade, 2015), particularly for girls of color with intellectual and developmental disabilities. Considering my goal to center the experiences of disabled girls of color, I focused analysis on the initiations the focal participants made with their teachers.

Talk and Actions

While there were fewer (84) sequences when girls of color with intellectual and developmental disabilities initiated talk with their teachers than their teachers with them (122), they did attempt initiations. The discursive practices disabled girls of color made (e.g., work completion, learning in progress, requests) give insight into how they attempted initiations, some of which were taken up (50) and which were not (34) by teachers, and how these girls navigated classroom participation structures with savvy and ingenuity (Annamma, 2016).

Resilience initiations about completed work. In this study, the initiations girls of color with intellectual and developmental disabilities made with their teachers through talk (e.g., saying teacher's name, commenting) and actions (e.g., handing their paper or notebook to teacher) about their finished work, were identified as Girls' Resilience Initiations for Work Completion. The shortest sequence when a teacher responded was three turns (student-teacher-student) and the longest sequence was seven turns. These findings are commensurate with prior research wherein youth claimed brief and subtle power by sharing personal information (Brooks, 2015). This finding adds to the extant literature on the roles teachers undertook through discursive practices in special education classrooms (Hanrahan, 2004) with an explicit focus on white teachers and disabled girls of color. For example, teachers took up the role of inquirer by asking questions. Some teachers acted as verifier by affirming student initiations with feedback, praise, or gratitude. Other teacher discourse placed the teacher in a director role wherein the teacher gave focal participants additional directions.

Resilience initiations about ongoing work. Disabled girls of color also used talk and actions to initiate with their teachers about their ongoing classwork, identified as Girls' Resilience Initiations for Ongoing Work. Often teachers were in close proximity when they took up a focal participant's initiations. In other instances, disabled girls of color said their teachers' names to secure their attention. In contrast, the three focal participants in the project who also used augmentative and accessible communication technologies and supports (Foley & Ferri, 2012) did not say the teacher's name but rather two took a turn after their teachers initiated and one used what may have been considered a term of endearment. This finding reveals that while the turn sequences were longer compared to when girls initiated about their completed work with

the longest sequence being 15 turns, the teachers often assumed control within the sequence and did not afford opportunities for deeper knowledge construction.

Resilience queries. In addition, focal participants asked questions or made requests in class through talk and actions, identified as Girls' Resilience Queries. Girls of color with intellectual and developmental disabilities asked *what*, *where*, and *how* questions. They also made requests about learning tools (e.g., pencil, basketball) and sought permission. The findings here are commensurate with prior research wherein youth claimed nuanced discursive power by asking questions (K. M. Collins, 2011a; Ingram & Elliot, 2014). This finding extends prior research illustrating that disabled girls of color also claim this discursive power through questions, something others may assume they cannot do because of their disability label.

Teachers respond. In some student-initiated queries, teachers interrupted the girl initiating or made assumptions about what the focal participant was querying. By their very nature, assumptions were not always correct. At times, teachers and students made repairs to ensure understanding and other times, the teacher moved on without acknowledging their assumption. This finding supports the existing literature on how teachers interrupt students and that this not only disrupts the fluency of the initiation (Bliss, McCabe, & Miranda, 1998), but subtracts from the subtle discursive power youth are claiming (Berry, 2006a; K. M. Collins, 2011a). This adds to that literature by specifically considering the kinds of unproductive interactions girls of color with intellectual and developmental disabilities had with teachers.

Teacher questions in response to the girls' initiations were most often closed questions (Durden & Dangel, 2008; Myhill, 2006). Teachers' questions could have taken the form of open questions depending on the dialogic stance the teacher took with the focal participants (Boyd & Markarian, 2015; Heritage & Heritage, 2013). However, teachers did not vary their questioning

techniques (Berry, 2006b; Piccolo et al., 2018), instead they praised and affirmed the girls' work, resulting in short answers from the focal participants, few questions from the girls, and brief turn sequences. Black (2004) found that teachers vary their questioning based on students' abilities; when teachers felt students had low abilities then they used more controlling forms of talk. The findings presented here add to the literature as teachers did use more controlling forms of talk with girls of color with intellectual and developmental disabilities which limited the girls' opportunities to play a more active role in their learning and ultimately did not augment their multilingual communication strategies.

Teachers do not respond. Importantly, there were also turn sequences in which teachers did not respond to the girls' initiations or queries. For example, in one case, the only observed focal student request was missed by the teacher and instead, taken up by a paraprofessional. In that same case, out of eight sequences, there was no sequence wherein the teacher took up the girl's initiations about her completed work. At times, this may have been because a teacher did not see or hear one of the focal participants attempt an initiation. Sometimes the girls did not physically approach a teacher but rather, attempted an initiation from an assigned desk or self-selected table. One contribution of this study is to illuminate how whiteness and ability as property (Annamma et al., 2013) interacted with linguisticism (Delgado Bernal, 1998; Phillipson & Skutnabb-Kangas, 1996) to constrain the girls' discursive opportunities. The girls were engaged in their learning. They asked questions and initiated about their learning from process to product. Yet, 40% of the girls' initiations were missed and unnoticed by their teachers. Missed initiations produced inequitable discursive opportunities, which was especially true for the three girls who also used augmentative and accessible communication technologies and supports.

In addition to not responding to the girls and noticing their missed initiations when examining classroom discourse during the second interview, teachers were not prepared to cultivate the girls' discursive strengths. For example, two special education teachers said they felt unsupported by administration and professionally uncertain how to best support girls who used augmentative communication. In addition, at least three teachers explained how they wanted to expand their questioning techniques in the classroom after examining discursive practices (including missed opportunities). While the teachers were not prepared, some assumed a position of helplessness as they did not seek out supports. For example, augmentative and accessible communication technologies were not readily available even though at least three focal participants asked for such supports. In fact, one teacher commented that she just did not know what questions to ask any more, yet she had known the student less than a year. This finding corresponds with prior research as teachers' perceptions of their own skills impacted their commitment to cultivating the discursive strengths of youth who used augmentative and accessible communication (Soto, 1997). This finding expands that research as how participating teachers felt (e.g., unprepared, unsupported, unsure) also negatively impacted the discursive possibilities for disabled girls of color. In other words, white teachers' feelings (Mattias, 2016), resulted in ineffectual discursive practices, which generated exclusionary schooling mechanisms for girls of color with intellectual and developmental disabilities.

One contribution of this study is to demonstrate how girls of color with intellectual and developmental disabilities had few visible supports for initiating talk and actions with their teachers. Yet, most disabled girls of color successfully initiated without tools, exemplifying their resilience in the classroom. Notably, the burden of presenting themselves as generators of knowledge (Delgado Bernal, 2002) through discursive practices lay almost entirely on their

shoulders. For example, teachers did not describe how they or their students were examining processes or setting goals for rich and meaningful student-focused discursive practices in the classroom (e.g., Agran et al., 2010). Moreover, there were not specialized supports in the special education classrooms (Causton-Theoharis et al., 2011) or embedded instruction (McDonnell, Johnson, Polychronis, & Risen, 2002) in the general education classrooms focused on facilitating talk and actions with and from disabled girls of color.

Some teachers supported the girls' discursive practices by getting to know them and what they needed, often from the perspective of student learning need (Naraian, 2016). While teachers resisted the school's marginalizing practices in these microinteractional ways, their energies were often spent initiating with the girls instead of finding ways for classroom discourse to be multidirectional (Huber et al., 2018) by supporting girls of color with intellectual and developmental disabilities to comment and question with their teachers and peers. In these ways, interactions felt one-sided with the teacher holding the power. Instead, general and special education teachers should continue to encourage girls of color with intellectual and developmental disabilities to initiate in class and support them to do so. Moreover, while teachers honored the presence of disabled girls of color in their classes by responding to the girls' initiations, it was more impactful at the microinteractional level between teacher and student than at the school-level as a systems-level approach (Annamma & Morrison, 2018b; Love, 2019). This finding adds to the extant literature by exposing the fissures of teacher resistance to marginalizing school practices (Annamma et al., 2013), attentive to how discursive practices generated inclusionary schooling mechanisms for disabled girls of color.

In sum, this study illustrated how girls of color with intellectual and developmental disabilities initiated with their teachers and the foci of their initiations. Teachers took up the

girls' initiations most often with closed questions, affirmations, and directions. When teachers responded to focal participants' initiations, the two engaged in short turn sequences and the interactions repeatedly did not consist of deep knowledge construction. Teachers also interrupted the girls and did not repair or ask questions to clarify after the interruption. Further, teachers missed or ignored 40% of the girls' initiations. These findings are important because disabled girls of color in this project had few visible supports for reciprocal conversations with their teachers. This resulted in girls of color with intellectual and developmental disabilities exclusively carrying the load of demonstrating their knowledge through classroom talk and actions.

Repositioning in Response to Marginalization

Disabled girls of color also repositioned (Davies & Harré, 1990), or refused to accept school marginalization, by selecting autonomous alternatives (Annamma, 2018b; Shogren, 2013), choices different from what their teachers recommended. Focal participants repositioned by bringing interest objects from home or another class to a learning space. Other times, girls of color with intellectual and developmental disabilities repositioned their bodies in ways different from what their teachers requested. In one case, a focal participant used physical actions to keep the teacher from handing in her work for her because she wanted to hand it in herself. In another case, a disabled girl of color repositioned discursively to show how her literary thinking was different from how her teacher had conceptualized the activity.

When teachers responded to the girls' repositioning, some supported through questions or comments while others disregarded this act. For example, teachers upheld the girls' autonomous alternatives when they asked questions or talked to the student about why she was repositioning. Other times, teachers honored the girls' repositioning by affording her the opportunity to live out

her choice, such as when one teacher allowed a focal participant to view the teaching demonstration from her seat rather than come up to the front table with her peers. Conversely, in two cases wherein the focal participants brought something they were interested in to a learning space, the teacher confiscated the item until the activity was over. Giving directions without checking in was another way for teachers to disregard a girl's repositioning. Notably, there were instances across all six cases wherein teachers missed or ignored girls' attempts to select self-governed alternatives. This is significant because prior to this study, little was known about how disabled girls of color in middle and high school repositioned in the face of marginalization.

Discursive Practices and Learning Tools

Another contribution of this study is to illustrate how discursive practices (texts) and materializations (school geographies and learning tools) operated in tandem through a sociospatial-textual dialectic (Honeyford & Zanden, 2013), meaning through the mutually constituted interactions of social practices, spaces, and texts as well as of social practices, spaces, texts, and learning tools. One example of this was in how school spaces (e.g., school libraries) intersected with texts (e.g., books, magazines) to generate inclusionary schooling mechanisms for one focal participant at the high school who frequented the school library often on her own accord to check out books and magazines. In contrast, the very same space and the texts within it generated exclusionary schooling mechanisms for three focal participants at the high school who did not have regular, weekly access to the library or the texts within due to the special education teacher's scheduling.

In addition, across all six cases disabled girls of color took photographs of texts in response to the photovoice prompts centered on learning tools. As focal participants considered texts as learning tools – tools that supported their learning, they expanded what had originally

been conceived as two separate ideas – learning tools as materializations and texts as discursive practices (as articulated in chapter one). This was an act of theory-building, which is when new knowledge is generated based on how people construct meaning grounded in their experiences and insights (Anzaldúa, 1990; Charmaz, 2006; P. H. Collins, 1998; Delgado Bernal, 1998; Pérez Huber, 2009). Theory-building happened again when disabled girls of color combined texts with learning tools and discussed how audiobooks could operate as exclusionary or inclusionary mechanisms. Thus, girls of color with intellectual and developmental disabilities conceptualized how learning tools and texts were interconnected.

Libraries, Texts, and Tools

The photographs, maps, and counter-narratives of girls of color with intellectual and developmental disabilities discussed the impact of school libraries on their opportunities with texts. This finding of disparate access to texts for girls of color with intellectual and developmental disabilities is commensurate with previous scholarship revealing that youth with intellectual and developmental disabilities often do not have access to literacy-rich environments (Roberts, Leko, & Wilkerson, 2013), including authentic texts (e.g., books with bindings, newspapers, textbooks). Instead, texts were often sight word cards, stories photocopied and stapled, or inaccessible (e.g., print was too small for one participant with a vision impairment). Further, focal participants expressed the importance of culturally relevant (Ladson-Billings, 1995) and sustaining (Paris, 2012) literature in the classroom; literary works they could relate to on a deeper level. Disabled girls of color also wanted more time with texts and more literary opportunities across texts (e.g., novels, text books, posters, worksheets with letters and numbers).

As stated previously, three participants at the high school did not have regular, predictable opportunities on a weekly basis to check out books or use the library as a generative,

resourceful space. Focal participants identified one way to re-boundary (expanded from Annamma, 2018a) their limited learning opportunities with texts in the classroom was to afford them opportunities to go to the library and check out books and then, bring those books back to the classroom to support a literacy-rich environment. In addition, primary and secondary participants at the middle school felt the school library did not have an expansive range of texts. Therefore, focal participants checked out books from the nearby public library. This again illustrated that disabled girls of color understood that they are being deprived of a literacy-rich and culturally sustaining environment, and that they could generate necessary solutions.

Girls of color with intellectual and developmental disabilities proposed combining texts with learning tools (e.g., audiobooks, text to speech applications) for meaningful literary experiences. Yet, focal participants had infrequent access to audiobooks at school. Moreover, opportunities for focal participants to listen to a book on tape multimodally, including physical or visual access while reading and listening was not observed during this study. Some disabled girls of color re-boundaried these limited school opportunities and engaged with audiobooks or other textual-tool configurations at home. The girls' solutions of integrating texts with learning tools link to prior research wherein teachers paired discursive practices and learning tools, such as read alouds of adapted grade-level biographies (Mims et al., 2012) and self-questioning strategies (L. Wood et al., 2015) for richer textual experiences. Furthermore, girls of color with intellectual and developmental disabilities participating in previous studies have enjoyed and benefited from using technology paired with texts (Knight et al., 2015; Spooner et al., 2015) as the strategies positively impacted the girls' academic measures (Finke et al., 2017; Shurr & Taber-Doughty, 2017). Moreover, pedagogical practices that integrate texts, including adapted or

modified texts, and learning tools can be implemented across content areas (Barnett, Frankel, & Fisher, 2018; Buckley-Marudas, 2015).

Beyond alignment with prior scholarship, one contribution of this study is to demonstrate the importance of the perspectives of girls of color with intellectual and developmental disabilities on the interconnectedness of texts, school spaces, and learning tools. Educational systems may benefit from asking disabled girls of color and their families what academic and social opportunities are most beneficial as well as what is missing. As Crenshaw (1989) stated, “If [our] efforts instead began with addressing the needs and problems of those who are most disadvantaged and with restructuring and remaking the world where necessary, then others who are singularly disadvantaged would also benefit” (p. 167). Moreover, the textual constraints identified and solutions generated by girls of color with intellectual and developmental disabilities speak to the processes that animate the statistics (Annamma et al., accepted) of underrepresentation in academic measures (e.g., high test scores) and underrepresentation in academic outputs (e.g., postsecondary education and employment). Disabled girls of color in this study experienced a textual boundary (Annamma, 2018a), meaning limited access to and meaningful opportunities with texts. This can inform how to reimagine textual access for youth of color with intellectual and developmental disabilities more generally.

Augmentative Communication

In three of six cases, disabled girls of color and their families described augmentative communication solutions when the girls’ communication strategies were not supported at school. In one case, the focal participant was a multilingual disabled girl of color in 11th grade. She spoke Spanish and English and wanted more speech and language services to cultivate her verbal skills. Her mother also wanted this for her daughter. However, each year the school denied the

family's request. Moreover, one special education teacher explained that bilingual youth with intellectual and developmental disabilities did not have a right to English language learning services; which may have been the message she had received from working in the district. This is significant because despite federal mandates requiring that schools provide language services and supports to bilingual youth with disabilities (Department of Education, 2016), the schools in this study were not providing these services. Instead, families had to choose – special education services or English language services.

In another case, the focal participant was in her first year at the high school's postsecondary program for youth 18-21 years old. She had graduated from the high school a year prior. She wanted a speech generating device similar to the one she had used in elementary and middle school to augment her multilingualism. Her mother concurred and felt her daughter's communicative strengths and gifts were not being realized at school.

Additionally, one focal participant, an 8th grade Middle Eastern girl with multiple disabilities who had recently immigrated to the United States, was in her first full year of school. The school had assigned her an iPad with speech generating software programmed on it. However, the device was not fit for the girl or her family, meaning (a) the device was not programmed with her home language and English, (b) the family did not participate in the assessment process or the design of the program, and (c) the girl's and her family's comfort with and impressions of the device were not considered (Dukhovny & Kelly, 2015; Soto & Yu, 2014). Finally, the device was not used consistently at school with dedicated and trusting communication partners (Soto, Hartmann, & Wilkins, 2006).

Consequently, this meant that these three girls were tasked with navigating academic and social experiences and communicating about their learning without technologies and supports,

even though these technologies and supports existed. Said differently, while there were resources and supports within the district as well as in neighboring universities and organizations, they were not afforded to these three disabled girls of color. Herein lay another example of a debilitating practice (Puar, 2017) wherein resources and supports were withheld from the girls, resulting in negative social and material realities (Erevelles, 2011b).

Despite these varied forms of marginalizations, all three girls of color with intellectual and developmental disabilities employed creative and diverse communication strategies at school and home. They also generated solutions that were specific to them and their families. However, the school district had granted their families few, if any, opportunities to engage in collaborative partnerships (Mindel & John, 2018; Soto & Yu, 2014) about their daughters' discursive practices. The girls' and their families' experiences support the existing literature on the importance of family-school partnerships for multilingual and multiply-marginalized families of color and their disabled girls who use augmentative communication (Dukhovny & Kelly, 2015; Mindel & John, 2018; Pickl, 2011; Soto & Yu, 2014). Moreover, this finding adds to the extant literature on the absence of family-school partnerships with a particular focus on multilingual girls of color with intellectual and developmental disabilities and their families.

The three cases discussed here are important to point out because these three girls were multiply marginalized at the intersections of racism, ableism, and raciolinguistic ideologies, which are ideologies that "conflate certain racialized bodies with linguistic deficiency unrelated to any objective linguistic practices" (Flores & Rosa, 2015, p. 150), by the school districts serving them. The intersecting oppressions of racism, ableism, and raciolinguicism operated in tandem to deny the girls and their families their requests for what would benefit the girls the most and thus, constrained the girls' access to communication and learning. Such multiplicative

exclusionary schooling mechanisms negatively impacted the girls' academic and social experiences at school.

Another contribution of this study is to highlight what may have led to a lack of family-school partnerships between disabled girls of color, their families, and school systems (Miller, 2019). Special education teachers cited a reluctance around partnering with families and did not connect with families to learn about the focal participant's communicative strengths and styles (Soto & Yu, 2014). Notably, teachers felt they would not be heard if they advocated for the girls to building administration or school district. School personnel also discussed a lack of designated collaboration time for special education teachers, speech-language pathologists, teachers of various languages, or liaisons and interpreters who could facilitate collective decision-making with families. Moreover, the teachers did not cite professional development opportunities that would lend to bridging knowledge across special education, home language, and speech-language professional fields. In fact, the schools did not assume a bilingual or multilingual approach to language learning (Alper, 2017; Cheatham & Barnett, 2017; Dukhovny & Kelly, 2015; Harrison-Harris 2002). That said, girls of color with intellectual and developmental disabilities, their families, and their teachers cited barriers to augmentative communication.

In sum, this study illustrated how ableism, racism, and raciolinguistic ideologies operated in tandem and through varied mechanisms to constrain access to augmentative and accessible communication technologies and supports for disabled girls of color who asked for and needed them. These exclusionary schooling mechanisms were driven by inequitable family-school partnerships with and for multiply-marginalized disabled girls of color and their families, thus misrepresenting the girls and their families in educational decisions that most impacted the girls. Ultimately, the lack of access to such technologies and supports negatively impacted the

academic and social experiences of girls of color with intellectual and developmental disabilities. While the girls found savvy and creative (Annamma, 2016; Annamma et al., 2016) ways to navigate communication-based oppressions, it was wholly unjust for schools to ask girls of color with intellectual and developmental disabilities to carry such a burden.

Disability Labeling

Lastly, it is important to draw attention to the disability label discrepancies that existed in this study between parent/guardian demographic forms and district-imposed disability labels as noted on student IEPs (please refer to Table 1). While this study focused on girls of color with intellectual and developmental disabilities (i.e., autism, cerebral palsy, deaf/blindness, intellectual disability, multiple disabilities), not all girls participating in this study had these disability labels according to the parent/guardian demographic forms. Yet, all girls of color in this study were given the same disability labels by the school district – intellectual disability and speech/language impairment. This meant that for one participant with multiple disabilities, including vision impairment/blindness and cerebral palsy, she was labeled with an intellectual disability. Similar was true for another participant who had a physical disability and complex communication needs; she was labeled with an intellectual disability. Another girl's family reported that she had autism and ADHD, however the school district gave her labels of intellectual disability and speech/language impairment. In fact, none of the disability labels as noted by the girls' families corresponded with the district-imposed disability labels. Further, more than one teacher did not know the girls' disability labels as designated on their IEPs until I asked because I was concerned that some girls did not qualify for the study. This meant disabled girls of color in this study may have been mislabeled by the school district. In addition, traits associated with particular disability labels may have been misapplied to the girls. Furthermore,

educational decisions were driven by disability labels that did not represent the girls' strengths and needs, resulting in additional negative consequences such as restricting access to academic assignments, learning tools, and social interactions. However, it is also important to note that I am not claiming that if the girls had all been properly labeled they would have received appropriate services as literature illustrates that is not the case (Kurth et al., 2019). Nor am I arguing that those who have intellectual disability should have the restricted access these girls of color experienced. Instead, I am naming the fluidity of disability labels and the complexities that arise when they are reified (Connor & Ferri, 2007; Leonardo & Broderick, 2016).

Implications and Limitations

Ultimately, this study builds on extant scholarship by affirming that materializations and discursive practices separately and connectedly generated inclusionary and exclusionary schooling mechanisms in overt and subtle ways for disabled girls of color in middle and high school. Based on the findings from this empirical study, implications for pedagogy and limitations and implications for research are discussed next.

Implications for Pedagogy

Next, I discuss three implications for pedagogy that arose from this study regarding praxis or "reflection and action upon the world in order to transform it" (Freire, 2000, p. 51). First, I consider how examining materializations is a promising practice for praxis. Then, I discuss the importance of critical discourse analysis for praxis. Finally, I discuss the pedagogical potentials of using arts-based methods with youth in the classroom for praxis.

Materializations as tools for praxis. Another implication from this study is the significance of using visual representations as tools for praxis (Freire, 2000). In this study, teachers used published school maps and researcher-generated photographs and maps when

examining and reflecting on materializations. For example, one teacher reflected on how asking disabled girls of color about their hopes and fears about a particular content area could impact her pedagogical practices because she would know how students feel and plan to support them accordingly. Prior research has used teacher-generated photography (e.g., reflective photography; Wolfenden & Buckler, 2015) and teacher-generated drawings with photography frames (e.g., light bulb moments, complexity, personal growth and understanding; McCracken, 2015) as mediums for teacher praxis. An extension of examining research-generated materials would be to incorporate teacher-generated photographs and maps of materializations. Teacher-generated materials may support teachers in problem-posing current educational injustices by making what is tacit and unknown within a practice more explicit (Howes & Miles, 2015).

Given that school personnel noted how difficult it was to collaborate with their peers due to their own practice and policy, I suggest teachers can utilize visual representations to organize and collaborate. Teachers can present the concrete examples represented in their photographs and maps to administrative personnel and policymakers when addressing their concerns (e.g., lack of English language services for disabled girls of color). In addition, they can collaborate with other teachers by comparing and contrasting learning tools and classroom layouts across spaces (e.g., analyze how each can be inclusionary or exclusionary). Yet, each of these must be combined with teachers listening to student perspectives.

Discursive practices as tools for praxis. First, an implication from this study lies in using critical discourse analysis as a tool for praxis. With discourse transcribed as printed text taken directly from audio and video recorded lessons, teachers participating in this study critically reflected on several dimensions of their pedagogy. For example, some teachers did acknowledge how little they were engaging with disabled girls of color within turn sequences

and others shared their strategies for encouraging student talk and action (Donoahue, 1998). Through conversation and reflection, teacher shared the ways they were unprepared to teach disabled girls of color (Robertson, McCaleb, & Smith, 2017), thus exposing their pedagogical strengths and struggles.

Examining discursive practices in the classroom resulted in goal setting and action focused on diversifying questioning techniques (Heritage & Heritage, 2013). For other teachers, reflections on classroom discursive practices were catalysts to enlist the support of the speech-language pathologist about communication technologies. Moreover, critical discourse analysis in partnership with current educators revealed how they needed more time and opportunity to engage with discursive practices. Therefore, the amount of time spent on using these promising praxis tools should be extended for lasting pedagogical change (Darder, 2002). With more opportunities for cycles of feedback and reflection, critical discourse analysis has proven to be one useful tool for praxis (Razfar, 2012; Rogers & Mosley, 2006).

Based on the findings from this study, teachers may benefit from varying the formats (e.g., video, audio, discourse transcribed; Etscheidt, Curran, & Sawyer, 2012) by which they examine classroom discourse. Video analysis has been used to support teachers' noticing (McDuffie et al., 2014), which is attending to classroom actions and interactions. Reflecting and acting on what teachers observe is an integral part of noticing. When considering educational transformation for girls of color with intellectual and developmental disabilities, noticing would also include examining the presence of microaggressions (Dávila, 2015; Pérez Huber & Solórzano, 2015) surrounding race, disability, and gender. In addition, teachers could use techniques from critical discourse methods to notice dysconscious racism (J. E. King, 1991) and dysconscious ableism (Broderick & Lalvani, 2017).

Photography and cartography with youth as tools for praxis. Another important implication for pedagogy is the encouraging practice of affording disabled girls of color meaningful opportunities to use photography and mapping to inform teacher praxis. For example, teachers might use participatory approaches to ask girls about their schooling experiences, including what they find inclusionary and exclusionary. They might also ask students what they want to explore through photography and cartography. By considering and acting on the girls' input, teachers' pedagogical practices would operate in resistance to deficit narratives that girls of color with intellectual and developmental disabilities are different and less than. Yet, praxis does not stop at reflection but must continue with action (Cologon, Cologon, Mevawalla, & Niland, 2019).

Limitations and Implications for Future Scholarship

Study limitations and subsequent implications for future research are presented next. First, I consider limitations and implications for future participatory scholarship with disabled girls of color. Then, I discuss implications for methods focused on centering youth perspectives while diversifying sampling and methods. What is important is that each limitation in this section is directly linked to implications for future research.

Photovoice Research with Youth with Disabilities

One limitation of this study occurred at the first step – identification. The project conceptualization came from me based on extant research, with support from university mentors and colleagues. In future research, I would like to begin photovoice projects with youth at the identification step – where the people, place, and purpose are established (Latz, 2017). Instead of deciding these, I would like to ask disabled girls of color what they are interested in researching, decide on the people and places together, and co-create the purpose and research question(s)

together. This would give the girls more ownership of the project and result in an analysis of what they were most concerned about.

Education step. Another limitation of this study was dedicating only a short amount of time (10-15 minutes) to photographic literacy. Originally, I had planned to dedicate 30-60 minutes to photographic literacy (Ewald & Lightfoot, 2001) and the essential elements of photography (Latz, 2017; Winton, 2016). In future research, I would find a way to allot more time to photographic literacy. Many disabled girls of color in this project were interested in photography and wanted to cultivate their skills. Moreover, photographic literacy could build additional trust between researcher and youth as more time is spent on the process (Ha & Whittaker, 2016; Kembhavi & Wirz, 2009).

Documentation, narration, and ideation steps. The documentation step of photovoice was a place of strength that also held possibilities for expansion. In this study, I integrated photovoice methodologies with interviews and focus groups. However, one place for expansion is incorporating additional group work. There was a disparate amount of group work at the high school in comparison to the middle school. Mitchell and colleagues (2016) have discussed the significance of group work in photovoice projects with disabled girls of color in Vietnam because group work allowed the girls to support one another and learn from each. Moreover, opportunities for collective work may lead to new understandings (J. Whitney, 2006). At the middle school, there was only time for one focus group during the ideation step. At the high school, the focus group session during the ideation step lasted longer and there were seven more group work sessions during the presentation step.

Presentation and confirmation steps. One limitation of this study was the narrow use of presentation and confirmation, the last two steps in photovoice (Latz, 2017). The presentation

step directly links one of the aims of photovoice to its impact on policymakers. Yet, both steps are under-research and under-theorized (Latz, 2017). In this study, the photovoice exhibition (discussed in chapter 3) in the presentation step, was the first time teachers and administrators saw the girls' photographs collectively. The exhibition was a bridge for next steps to enact social change with and for disabled girls of color. However, stakeholders experiences at the event were not collected. When this study concluded, it was uncertain how the school was going to move forward with the girls' concerns and solutions. With more time, stakeholders' experiences would have been collected formally through the confirmation step (Jurkowski & Paul-Ward, 2007). This data collection may have given the project an avenue for next steps.

In future research projects, I aim to capitalize on the presentation and confirmation steps of photovoice with youth. When working with schools, the next iteration may consist of forming intergenerational and cross-sector partnerships of stakeholders (e.g., students, families, school personnel) would engage in mutually conceived partnerships seeking to address student concerns and solutions for change. This would be an opportunity to harness the strengths and gifts of interested stakeholders, led by youth and families (Booker & Goldman, 2016).

Expanding Participation Across Stakeholders

While the focus on students as primary participants was a strength of the study, one limitation was lack of stakeholders beyond the girls. This results in a clear implication for future research by expanding project participation to stakeholders who represent varied sectors. For example, while I spoke briefly with three families when completing the demographic forms, family members had positive and negative experiences with schools that needed further attention. Also, families have a wealth of knowledge (Yosso, 2005) and expertise that may or may not be realized by schools. Family member participation would be vital for future research.

In addition, inviting other school personnel, such as paraprofessionals, speech-language pathologists and transition coordinators would be important next steps while still centering youth perspectives. In some cases, focal participants had more interactions with paraprofessionals than the lead teacher, in general or special education classrooms. Extant research has shown how youth with intellectual and developmental disabilities may receive more academic instruction from paraprofessionals than special education teachers (Giangreco, 2010), yet paraprofessionals' experiences are underrepresented in the research (Riggs, 2001). Speech-language pathologists would provide additional insight, including continuities and fissures in IEP team collaboration and partnership with multiply-marginalized families and youth who use augmentative communication (Bridges, 2004; Soto & Yu, 2004).

My social location may have been a strength when talking with white teachers. However, another limitation of the current study was my social location when considering the focal participants. As a white woman, I only shared gender with all and language with some participants as points of commonality with girls of color with intellectual and developmental disabilities. The focal participants may have been more comfortable with me if I had shared additional social locations with them. For example, they may have shared more about their school experiences if I was a disabled woman of color. Moreover, I cannot claim authority. In the words of bell hooks (1989), "problems arise not when white women choose to write about the experience of non-white people, but when such material is presented as 'authoritative'" (p. 48). One implication for my future scholarship is co-facilitating or supporting critical and participatory research with disabled girls of color alongside or led by scholars, activists, and community members who experience interlocking oppressions (P. H. Collins, 2012, 2013).

Conclusion

The experiences of girls of color with intellectual and developmental disabilities in middle and high school are underrepresented in education research (Erevelles & Minear, 2010; Sinclair et al., 2018). The extant research exposes how youth of color with intellectual and developmental disabilities are overrepresented in segregated special education academic assignments (Blanchett et al., 2009; de Valenzuela et al., 2006; Fierros & Conroy, 2002), underrepresented in academic measures (Wagner et al., 2006), and underrepresented in academic outputs (Think College, 2015). Moreover, disabled girls of color are overrepresented in disciplinary assignment (Office for Civil Rights, 2016; Sullivan et al., 2014) and women of color with developmental disabilities are underrepresented in community-based employment settings (Hasnain & Balcazar, 2009). However, because there is a lack of intersectional identification, the academic and disciplinary assignments, academic measures, and academic outputs for girls of color with intellectual and developmental disabilities are unclear. Moreover, an intersectional analysis (P. H. Collins, 1998, 2000, 2015; Crenshaw, 1989, 1993), which reveals interlocking oppressions (e.g., ableism, linguisticism, racism, sexism) at macrosociopolitical and microinteractional levels, is necessary to understand how disabled girls of color are impacted by such oppressions and how the girls reposition (Davies & Harré, 1990) in response. Thus, the purpose of this study was to understand how inclusionary and exclusionary schooling mechanisms were generated through materializations (e.g., processes that result in school geographies, classroom layouts, learning tools) and discursive practices (e.g., talk, texts, actions) for girls of color with intellectual and developmental disabilities from the girls' perspectives.

In the present study, the photographs, maps, and counter-narratives of six disabled girls of color have shown that inclusionary and exclusionary schooling mechanisms were generated

through materializations in classrooms and across broader school spaces in overt and nuanced ways. Inclusionary and exclusionary schooling mechanisms were also generated through discursive practices between focal participants and their teachers as well as through augmentative communication. Girls of color with intellectual and developmental disabilities also revealed how inclusionary and exclusionary schooling mechanisms were generated when learning tools met spaces (e.g., classrooms, school libraries) and texts. Conceptualizing this study through DisCrit (Annamma et al., 2013) and sociocultural theory (Lave & Wenger, 1991; Lewis et al., 2007; Rogoff, 2003; Shweder, 1990; Vygotsky, 1978) allowed an examination of how oppressive ideologies (e.g., racism, ableism, linguicism) and schooling mechanisms in learning contexts worked together within and through materializations and discursive practices while honoring the experiences and perspectives of girls of color with intellectual and developmental disabilities as generators of knowledge (Delgado Bernal, 2002). Ultimately, I hope the way the girls shed light on inclusionary and exclusionary mechanisms brings to bear the need to center girls of color with intellectual and developmental disabilities as valuable partners in pedagogy and research.

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Appendix B: Consent Form ~ Parents & Guardians (English and Spanish versions)

KEY INFORMATION

- The goal of this project is to learn about your daughter's school experiences to improve education for girls of color who receive special education services and supports.
- Your participation in this research project is completely voluntary. Your participation will take about 30 minutes.
- You will be asked to do the following procedures.
 - Give permission that your daughter be observed in class, participate in a photography project at school, and participate in interviews and a focus group discussion.
 - Release data including: audio/video recordings from classroom observations, interviews, and focus groups as well as photographs and maps that your daughter creates about her education.
 - Complete a demographics questionnaire about your daughter.
- More detailed information on the procedures can be found below.
- I do not anticipate any risk or discomfort to you or your child in this study. Details regarding possible risks or discomforts are found below.
- Your daughter may indirectly benefit from participating in this project by sharing her experiences and opinions. She will also help to make education stronger for other girls who receive special education services and supports. Your daughter will receive digital copies on a CD or hard copies in a photo album of her photographs, dependent on her preferences. She will keep the maps she creates. She will also receive a \$25 gift card for participating.
- Your alternative to participating in this research study is not to participate.

INTRODUCTION

The Department of Special Education at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You may refuse to sign this form and not participate in this study without prejudice. Even if you agree to participate, you are free to withdraw at any time and it will not affect your relationship with the University of Kansas.

PURPOSE OF THE STUDY

The purpose of this study is to learn about the experiences girls who receive special education services are having in middle school and high school. Specifically, I am looking to understand more about how communication and learning tools in the classroom facilitate learning for your daughter. What works for her, what does not work, and what would she like to see changed. It is entirely up to you and your daughter if she participates in this study.

PROCEDURES

This study takes place during the 2018-2019 school year. If you provide permission for your daughter to participate in this study, then you will be allowing her to:

- 1) be observed and audio/video recorded in 2 classes or during 2 subjects, for a total of 6 observations.
- 2) take photographs (disposable camera provided) of spaces in the school where she feels she learns best and of learning tools that work for her. If your daughter chooses, she will share these photographs in an exhibit at a later time.
- 3) create maps of how she experiences her school.
- 4) be audio/video recorded during interviews as she shares about her schooling experiences up to now as well as about her photography. If you do not want her to be audio/video recorded during interviews, then I can take notes. The audio/video recording during interviews can stop at any time and your daughter can stop participating at any time.
- 5) be audio/video recorded during a focus group discussion with other girls about their photography and school experiences. Video recordings will only be used if your daughter is a visual communicator. I will maintain anonymity in the videos by masking or blurring faces. Your daughter can choose to stop participating at any time during the focus group discussion.

In addition, accommodations, adaptations, and modifications will be provided to ensure your daughter can participate in the photography, mapping, interview, and focus group activities in the ways that work best for her. Finally, you and your daughter will each complete a demographics questionnaire.

There will be a photography project, 2 interviews, and 1 focus group discussion. They may last between 1-2 hours each. Interviews will take place at school unless you and your daughter prefer interviews to take place at home. The focus group discussion and photography project will happen at school (disposable cameras provided). The interviews, focus group discussion, and photography project will happen at a time that is minimally intrusive and does not disrupt academics and social development, including before or after school. Observations will occur while your daughter is in class. Your daughter will keep all originals of the media (photographs and maps) she creates. I will make a digital copy of the media she creates.

RISKS OR DISCOMFORTS

Please be advised that although the researchers will take every precaution to maintain confidentiality of the data, the nature of the group discussion your daughter will participate in prevents the researcher from guaranteeing confidentiality. If you would prefer, your daughter can do an individual interview instead of a focus group in order to increase confidentiality. Even though interviews, focus group discussion, and photography project will happen at a preferred time that does not disrupt academic and social development, missing class could be considered a risk.

BENEFITS

Participation in this study gives the researcher a chance to learn about the experiences your daughter is having at school. This will further help researchers understand how to support educators to improve their teaching practices. If you give permission for your daughter to take

part in this study, she may indirectly benefit from being in this study by sharing her experiences and opinions. She will also help to make education stronger for other girls who receive special education services and supports.

PAYMENT TO PARTICIPANTS

Your daughter will receive a \$25 gift card for participating. If you withdraw your daughter or she chooses to withdraw at any time, she will still receive the gift card.

PARTICIPANT CONFIDENTIALITY

Your name or your daughter's name will not be associated in any publication or presentation with the information collected about your daughter or with the research findings from this study. Instead, I will use a pseudonym rather than her name. Any identifiable information will not be shared unless (a) it is required by law or university policy, or (b) you give written permission. Your or your daughter's identifiable information will not be used or distributed for future research studies even if her identifiable information is removed

Permission granted on this date to use and disclose your information remains in effect indefinitely. By signing this form, you give permission for your daughter to participate in this study and for the use and disclosure of your daughter's anonymized information for the purposes of this study at any time in the future.

REFUSAL TO SIGN CONSENT AND AUTHORIZATION

You are not required to sign this Consent and Authorization form, and you may refuse to do so without affecting your relationship with the research team. If you refuse to sign, your daughter cannot participate in this study.

CANCELLING THIS CONSENT AND AUTHORIZATION

You may withdraw your consent allowing your daughter to participate in this study at any time. You also have the right to cancel your permission to use and disclose further information collected about your daughter, in writing, at any time, by contacting either Amanda Miller via email at alm.amandamiller@ku.edu, by phone at (704) 985-6035, or by sending your written request to: Amanda Miller, University of Kansas, Department of Special Education, 1122 W. Campus Road, JRP 521, Lawrence, KS 66045. If you cancel permission to use your daughter's information, I will stop collecting additional information. Within one week of expressing your desire to withdraw, all your daughter's identifying information and data will be deleted from the secure database by the primary investigator listed below.

QUESTIONS ABOUT PARTICIPATION

Questions about procedures should be directed to the researcher(s) listed at the end of this form.

PARTICIPANT CERTIFICATION

I have read this Consent and Authorization form. I have had the opportunity to ask, and I have received answers to, all questions I had regarding the study. I understand that if I have any additional questions about my rights as a research participant's parent and/or legal guardian, I may call (785) 864-7429 or (785) 864-7385, write the Kansas Human Research Protection Program (HRPP), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7568, or email irb@ku.edu.

I agree to allow my child to take part in this study as a research participant. By my signature I affirm that I am at least 18 years old and that I have received a copy of this Consent and Authorization form.

Name of Youth Participant

Parent/Legal Guardian's Name *Printed*

Parent/Legal Guardian *Signature*

Date

Researcher Contact Information:

Amanda Miller Primary Investigator Department of Special Education 1122 W. Campus Road, JRP 521 Lawrence, KS 66045 alm.amandamiller@ku.edu (704) 985-6035	
Jennifer Kurth Faculty Supervisor Department of Special Education 1122 W. Campus Rd., JRP 521 University of Kansas Lawrence, KS 66045 jkurth@ku.edu (785) 864-4954	Subini Annamma Faculty Supervisor Department of Special Education 1122 W. Campus Rd., JRP 521 University of Kansas Lawrence, KS 66045 subiniannamma@ku.edu (785) 864-1710

FORMULARIO DE CONSENTIMIENTO A PADRES Y TUTORES

INFORMACIÓN IMPORTANTE

- El objetivo de este proyecto es conocer las experiencias escolares de su hija para mejorar la educación de las niñas o jóvenes latinas, hispanas o multirraciales que reciben servicios y apoyo de educación especial.
- Su participación en este proyecto es completamente voluntaria. Su participación durará unos 30 minutos.
- Se le pedirá que realice los siguientes procedimientos.
 - Se le pedirá que dé permiso para que su hija sea observada en clase, participe en un proyecto de fotografía en la escuela, entrevistas y una discusión en un grupo de enfoque.
 - Aceptar el uso de datos que incluyen: grabaciones de audio / video de observaciones en el aula, entrevistas y grupos focales, así como fotografías y mapas de cómo su hija experimenta su escuela.
 - Completar un cuestionario demográfico sobre su hija.
- Se puede encontrar información más detallada sobre los procedimientos a continuación.
- No anticipo ningún riesgo para usted o su hija en este estudio. Los detalles sobre los riesgos se encuentran a continuación.
- Su hija recibirá copias digitales en un CD o copias impresas en un álbum de fotos de sus fotografías, dependiendo de sus preferencias. Ella también mantendrá los mapas que haga. Su hija recibirá una tarjeta de regalo de \$25 por participar. Ella puede beneficiarse indirectamente al compartir sus experiencias y opiniones. También ayudará a fortalecer la educación de otras niñas o jovencitas que reciben servicios y apoyo de educación especial.
- Su alternativa a participar en proyecto es no participar en el proyecto.

INTRODUCCIÓN

El Department de Educación especial de la Universidad de Kansas apoya la práctica de protección para los seres humanos que participan en la investigación. La siguiente información se proporciona para que usted decida si desea participar en el presente estudio. Puede negarse a firmar este formulario y no participar en este estudio sin prejuicios. Incluso si acepta participar, puede retirarse en cualquier momento y no afectará su relación con la Universidad de Kansas.

PROPÓSITO DEL ESTUDIO

El propósito de este estudio es conocer las experiencias que tienen las niñas o jovencitas que reciben servicios de educación especial en la escuela secundaria y preparatoria. Específicamente, busco entender más acerca de cómo las herramientas de comunicación y aprendizaje en el aula facilitan el aprendizaje para su hija. Lo que funciona para ella, lo que no funciona y lo que a ella le gustaría que cambiara. Depende totalmente de usted y su hija si participa en este estudio.

PROCEDIMIENTOS

Este estudio tiene lugar durante el año escolar 2018-2019. Si proporciona permiso para que su hija participe en este estudio, entonces le permitirá:

- 1) que sea observada y se tome audio / video grabado en 2 clases o durante 2 asignaturas, para un total de 6 observaciones.
- 2) tomar fotografías (con cámara desechable provista) de los espacios de la escuela donde ella sienta que aprende mejor y de las herramientas de aprendizaje que funcionan para ella. Si su hija decide; Ella podrá compartir estas fotografías en una exhibición, un tiempo después durante el año escolar.
- 3) crear mapas de cómo ella experimenta su escuela.
- 4) hacer audio / video grabado durante las entrevistas mientras comparte sobre sus experiencias escolares hasta ahora, así como sobre su fotografía. Si no desea que se grabe audio / video durante las entrevistas, entonces puedo tomar notas. La grabación de audio / video durante las entrevistas puede detenerse en cualquier momento y su hija puede dejar de participar en cualquier momento si por cualquier motivo se siente incómoda.
- 5) se realizará audio / video grabado durante una discusión de grupo con otras niñas sobre sus fotografías y experiencias escolares. Las grabaciones de video solo se utilizarán si su hija es un comunicador visual. Mantendré el anonimato en los videos cubriendo o difuminando las caras. Su hija puede elegir dejar de participar en cualquier momento durante la discusión del grupo si así lo desea.

Además, se proporcionarán adaptaciones y modificaciones para garantizar que su hija pueda participar en las actividades de fotografía, mapas, entrevista y grupos de enfoque de la manera que mejor le funcione. Finalmente, usted y su hija completarán un cuestionario demográfico.

Habrán un proyecto de fotografía, 2 entrevistas y 1 discusión de grupos de enfoque. Pueden durar entre 1 y 2 horas cada uno. Las entrevistas se llevarán a cabo en la escuela, a menos que usted y su hija prefieran que las entrevistas se realicen en el hogar. La discusión del grupo y el proyecto de fotografía se llevarán a cabo en la escuela (se proporcionan cámaras desechables). Las entrevistas, el debate en grupos de enfoque y el proyecto de fotografía se realizarán en un momento que sea mínimamente distractivo y no interrumpa el desarrollo académico y social, incluso antes o después de la escuela. Las observaciones ocurrirán mientras su hija está en clase. Su hija conservará todos los originales de los medios (fotografías y mapas) que haga. Haré una copia digital de los medios que ella haga y se las daré al final.

LOS RIEGOS

Tenga en cuenta que aunque los investigadores tomarán todas las precauciones para mantener la confidencialidad de los datos, la naturaleza de la discusión grupal impide que el investigador garantice al cien por ciento la confidencialidad. Si lo prefiere, su hija puede hacer una entrevista individual en lugar de un grupo para aumentar la confidencialidad. A pesar de que las entrevistas, las discusiones en grupos y el proyecto de fotografía se realizará en un momento elegido que no interrumpa el desarrollo académico y social, si hay alguna excepción en el tiempo y falta a una clase sería considerado como bajo riesgo la clase perdida.

BENEFICIOS

La participación en este estudio le brinda al investigador la oportunidad de conocer las experiencias que su hija está teniendo en la escuela. Esto ayudará aún más a los investigadores a entender cómo ayudar a los Maestros a mejorar sus prácticas de enseñanza. Si autoriza a su hija a participar en este estudio, puede beneficiarse indirectamente de participar en este estudio

compartiendo sus experiencias y opiniones. También ayudará a fortalecer la educación de otras niñas o jovencitas que reciben servicios y apoyo de educación especial.

PAGO A LOS PARTICIPANTES

Su hija recibirá una tarjeta de regalo de \$25 por participar. Si retira a su hija o ella decide retirarse en cualquier momento, seguirá recibiendo la tarjeta de regalo.

CONFIDENCIALIDAD DEL PARTICIPANTE

Su nombre o el nombre de su hija no se asociaran en ninguna publicación o presentación con la información recopilada sobre su hija o con los resultados de la investigación de este estudio. En su lugar, usare un seudónimo en lugar de su nombre. Cualquier información identificable no se compartirá a menos que (a) sea requerida por la ley o la política de la universidad, o (b) usted otorgue un permiso por escrito. La información identificable de su hija no se utilizará ni se distribuirá para estudios de investigación futuros, incluso si se elimina su información identificable.

El permiso otorgado en esta fecha para usar y divulgar su información permanece vigente indefinidamente. Al firmar este formulario, usted otorga permiso para que su hija participe en este estudio y para el uso y compartimiento de la información anónima de su hija para los fines de este estudio en cualquier momento en el futuro.

RECHAZO DE FIRMAR CONSENTIMIENTO Y AUTORIZACIÓN

No está obligado a firmar este formulario de consentimiento y autorización, puede negarse a hacerlo sin afectar su relación con el equipo de investigación. Si se niega a firmar, su hija no puede participar en este estudio.

CANCELACIÓN DE ESTE CONSENTIMIENTO Y AUTORIZACIÓN

Puede retirar su consentimiento de participación de su hija en este estudio en cualquier momento. También tiene derecho a cancelar su permiso para usar y compartir la información adicional recopilada sobre su hija, en cualquier momento, comunicándose con Amanda Miller por correo electrónico a alm.amandamiller@ku.edu, por teléfono al (704) 985 -6035, o enviando su solicitud por escrito a: Amanda Miller, University of Kansas, Department of Special Education, 1122 W. Campus Road, JRP 521, Lawrence, KS 66045. Si cancela el permiso para usar la información de su hija, dejaré de recopilar información adicional. Dentro de la semana de haber expresado su deseo de retirarse, toda la información y los datos de identificación de su hija serán eliminados de la base de datos por el investigador principal que se indica a continuación.

PREGUNTAS SOBRE LA PARTICIPACIÓN

Las preguntas sobre los procedimientos deben dirigirse al investigador (s) que se encuentra al final de este formulario.

CERTIFICACIÓN PARTICIPANTE

He leído este formulario de Consentimiento y Autorización. He tenido la oportunidad de preguntar, y he recibido respuestas a todas las preguntas que tenía sobre el estudio. Entiendo que si tengo preguntas adicionales sobre mis derechos como padre o tutor legal de un participante de la investigación, puedo llamar al (785) 864-7429 o al (785) 864-7385, escribir a Kansas Human

Research Protection Program (HRPP), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7568, o correo electrónico irb@ku.edu.

Estoy de acuerdo en permitir que mi hija participe en este estudio como miembro de la investigación. Con mi firma, confirmo que tengo por lo menos 18 años de edad y que he recibido una copia de este formulario de consentimiento y autorización.

Nombre de la joven participante

Nombre del padre / tutor legal

Firma del padre / tutor legal

Fecha

Información de contacto para investigador:

Amanda Miller, Primary Investigator Department of Special Education 1122 W. Campus Road, JRP 521 Lawrence, KS 66045 alm.amandamiller@ku.edu (704) 985-6035	
Jennifer Kurth, Faculty Supervisor Department of Special Education 1122 W. Campus Rd., JRP 521 University of Kansas Lawrence, KS 66045 jkurth@ku.edu (785) 864-4954	Subini Annamma, Faculty Superviso Department of Special Education 1122 W. Campus Rd., JRP 521 University of Kansas Lawrence, KS 66045 subiniannamma@ku.edu (785) 864-1710

Appendix C: Student Assent Form

A person who knows the youth well (e.g., teacher) will be present as the researcher reads the following statement. If the youth uses an alternative communication device, the person will be someone familiar with that device who can interpret the student's response.

Introduction

Hello, my name is Amanda Miller and I am interested in finding out what works and what does not work for you in school so that I can help make education stronger for other girls who receive special education services and supports in school.

Your (parent/guardian's name) said it was okay if I came into your class and watched your learning and I want to know if you agree. They also said that you would be interested in participating in a photography project (disposable cameras provided) and talking to me about your photographs on your own and with other girls who also took photos.

Key Information

I will observe while you are in class and there will be 2 interviews and 1 group discussion. The interviews can happen before school, after school, or at home. The group discussion and photography project will take place at school. We will find a time that is best for you.

You will be taking photographs and creating maps about your education. You will get to keep all the materials you create. You can choose to share your photographs in an exhibit at a later time.

You can decide at any time that you do not want me to observe you in class. At any time, if you do not feel like answering any questions, then you do not have to. We can also stop talking if you want to take a break or if you just want to stop talking to me. You can ask me questions at any time too.

You may benefit by sharing your experiences and opinions. You will receive a photo album or a CD with all your photos and a \$25 gift card for participating. You will also help to make education stronger for other girls who receive special education services and supports.

I do not anticipate any risk to you in this study. You may withdraw at any time. If you withdraw, you will still receive the gift card.

Do you want to take part in this study? You can say no if you want to. It is your choice. In fact, even if you agree now and you change your mind later, I will stop. If you change your mind and do not want to take part in this study, you may still see me at school because other students and teachers may be participating.

Agree to participate if you:

- understand what you will be doing in this project,
- have had all your questions answered, and
- agree to take part in this research.

Contact Information: You may ask any questions you have now. If you have questions later, you may contact me, Amanda Miller, at:

Phone: (704) 985-6035

Email: alm.amandamiller@ku.edu

Do you want to participate in this project?

Your Signature

Printed Name

Date

You may also contact one of my faculty supervisors at the University of Kansas:

Jennifer Kurth Faculty Supervisor Department of Special Education 1122 W. Campus Rd., 521 JRP University of Kansas Lawrence, KS 66045 jkurth@ku.edu (785) 864-4954	Subini Annamma Faculty Supervisor Department of Special Education 1122 W. Campus Rd., 521 JRP University of Kansas Lawrence, KS 66045 subiniannamma@ku.edu (785) 864-1710
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Appendix D: Student Demographic Information ~ Student

Your name: _____

Your age: _____(years)

Your grade: _____

Your race/ethnicity (select all that apply):

- ☐ Black, African American
☐ Latina/x, Hispanic, Mexican
☐ White, Caucasian
☐ Alaska Native

- ☐ Native American
☐ Asian
☐ Pacific Islander
☐ If not listed, please specify: _____

1. How do you communicate best? (Please check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Natural speech | <input type="checkbox"/> Vocalizations |
| <input type="checkbox"/> Facial expressions | <input type="checkbox"/> Gestures |
| <input type="checkbox"/> Head movement | <input type="checkbox"/> Body language |
| <input type="checkbox"/> Eye gaze board | <input type="checkbox"/> Communication book |
| <input type="checkbox"/> Communication board | <input type="checkbox"/> Sign language |
| <input type="checkbox"/> Objects | <input type="checkbox"/> Pictures |
| <input type="checkbox"/> Writing | <input type="checkbox"/> Voice-output device |
| <input type="checkbox"/> Single-message device | <input type="checkbox"/> Dynamic language/symbol software |

2. What accommodations or supports help you learn?

- | | |
|---|---|
| <input type="checkbox"/> Paraprofessional/adult support | <input type="checkbox"/> Reduced assignments |
| <input type="checkbox"/> Extended time on assignments | <input type="checkbox"/> Extended time on tests |
| <input type="checkbox"/> Assistive technology devices | <input type="checkbox"/> Use of calculator |
| <input type="checkbox"/> Visuals | <input type="checkbox"/> A reader for testing |
| <input type="checkbox"/> Adjusted reading demands | <input type="checkbox"/> Preferred seating |
| <input type="checkbox"/> Hearing or vision support | <input type="checkbox"/> Scribe or notetaker |
| <input type="checkbox"/> Peer support | <input type="checkbox"/> Audio books |

Others: _____

3. Do you have some favorite classes this year? Favorite teachers?

If yes, which classes? _____

If yes, which teachers? _____

4. When do you expect to graduate or complete school? (Month/Year): _____

Appendix E: Student Demographic Information ~ Parents & Guardians (English and Spanish versions)

Your daughter's name: _____

Your daughter's age: _____(years)

Your daughter's grade: _____

Your daughter's race/ethnicity (select all that apply):

<input type="checkbox"/> Black, African American <input type="checkbox"/> Latina/x, Hispanic, Mexican <input type="checkbox"/> White, Caucasian <input type="checkbox"/> Alaska Native	<input type="checkbox"/> Native American <input type="checkbox"/> Asian, Asian American <input type="checkbox"/> Pacific Islander <input type="checkbox"/> If not listed, please specify: _____ _____
---	---

Your daughter's disability label (select all that apply or fill in the blanks if not listed):

<input type="checkbox"/> Intellectual Disability <input type="checkbox"/> Multiple Disabilities <input type="checkbox"/> Vision Impairment/Blindness <input type="checkbox"/> Emotional Disability <input type="checkbox"/> Specific Learning Disability <input type="checkbox"/> Speech or Language Impairment <input type="checkbox"/> _____ <input type="checkbox"/> _____	<input type="checkbox"/> Autism Spectrum Disorder <input type="checkbox"/> Hearing Impairment/Deafness <input type="checkbox"/> Traumatic Brain Injury <input type="checkbox"/> Orthopedic Impairment <input type="checkbox"/> Other Health Impairment <input type="checkbox"/> Deaf/Blindness <input type="checkbox"/> _____ <input type="checkbox"/> _____
--	---

1. How would you describe your daughter's learning support needs?

_____ Substantial support needs across learning areas (needs frequent, on-going and intensive support for learning new skills)

_____ Moderate support needs (needs regular, on-going and moderate support for learning new skills)

_____ Intermittent support needs (sometimes needs support for learning new skills)

2. How would you describe your daughter's self-care support needs (e.g., preparing meals, selecting clothing, etc.)?

_____ Substantial support needs across the day (needs frequent, on-going and intensive support for self-care skills)

_____ Moderate support needs (needs regular, on-going and moderate support for self-care skills)

_____ Intermittent support needs (sometimes needs support for self-care skills)

3. Is there a behavior plan in your daughter's current IEP?

_____ Yes
 _____ No
 _____ Not sure

4. Is there a health care plan in your daughter's current IEP?

_____ Yes
 _____ No
 _____ Not sure

5. How does your daughter communicate best? (Please check all that apply or fill in the blank if not listed)

_____ Verbalizations	_____ Vocalizations
_____ Facial expressions	_____ Gestures
_____ Head movement	_____ Body language
_____ Eye gaze board	_____ Communication book
_____ Communication board	_____ Sign language
_____ Objects	_____ Pictures
_____ Writing	_____ Voice-output device
_____ Single-message device	_____ Dynamic language/symbol software
_____	_____
_____	_____

6. Does your daughter receive any of the following accommodations or modifications at school? (Please check all that apply)

	Yes	No	Not sure	I want her to, but she currently does not
Paraprofessional/extra adult support (in addition to teacher)				
Extended time on assignments				
Assistive technology devices (for example: communication device, iPad)				
Pictures or visual aides				
Adjusted reading demands				
Hearing or vision support				
Peer support				
Reduced assignments				
Extended time on tests				
Use of calculator				
A reader for testing				
Preferred seating				
Scribe or notetaker				
Audio books				

Others: _____

7. Your daughter's *current* course of study:

- _____ General Diploma
 _____ College Preparatory
 _____ Life Skills
 _____ Vocational
 _____ Other (specify)
 _____ Not sure

8. Typical educational setting for your daughter *this year*:

- _____ General Education
 _____ Resource Room
 _____ Community Based Services
 _____ Self-Contained Setting (Special Education Class Only)
 _____ Other (specify)
 _____ Not sure

9. Does your daughter take general education classes this year?

- _____ Yes
 _____ No
 _____ Not sure

If yes, which ones? _____

Are there classes you wish your daughter was taking? Or classes you think she would enjoy that she is currently not enrolled in?

10. When is your daughter expected to graduate or complete school? (Month/Year): _____

INFORMACIÓN DEMOGRÁFICA DE LA ESTUDIANTE

Nombre de su hija: _____

Edad de su hija: _____ (años)

Grado al que asiste su hija: _____

Your daughter's race/ethnicity (select all that apply):

<input type="checkbox"/> Africo-Americana <input type="checkbox"/> Latina, Hispana, Mexicana <input type="checkbox"/> Blanca, Caucásica <input type="checkbox"/> Nativa de Alaska	<input type="checkbox"/> Nativa Norteamericana <input type="checkbox"/> Asiática <input type="checkbox"/> Islana Pacífica <input type="checkbox"/> Si no se encuentra en la lista por favor especifique: _____ _____
--	--

Nivel de discapacidad de su hija (seleccione todas los que apliquen):

<input type="checkbox"/> Discapacidad intelectual <input type="checkbox"/> Discapacidades múltiples <input type="checkbox"/> Impedimento visual/ceguera <input type="checkbox"/> Discapacidad emocional <input type="checkbox"/> Discapacidad específica de aprendizaje <input type="checkbox"/> Impedimento de habla o lenguaje <input type="checkbox"/> Si no se encuentra en la lista por favor especifique: _____	<input type="checkbox"/> Autista <input type="checkbox"/> Impedimento del oído/sordera <input type="checkbox"/> Lesión cerebral traumática <input type="checkbox"/> Impedimento ortopédico <input type="checkbox"/> Otros impedimentos de salud <input type="checkbox"/> Sordera/ceguera <input type="checkbox"/> _____
---	---

1. Cómo describe el apoyo que su hija necesita para aprender?

_____ Usualmente necesita apoyo constante en todas las áreas (necesita intensivo y frecuente apoyo para aprender nuevas cosas y retener lo ya aprendido).

_____ Apoyo moderado (necesita asistencia moderada regularmente y consistente para aprender nuevas cosas).

_____ Apoyo intermitente (algunas veces solamente necesita de asistencia cuando está aprendiendo cosas nuevas).

2. Cómo Describe el apoyo que necesita su hija para cuidar de sí misma? (Por ejemplo, preparando comida o escogiendo su ropa y vestirse)?

_____ Ayuda muy substancial, constante durante el día (necesita apoyo intensivo y constante para cuidar de sí misma).

_____ Ayuda moderada (necesita apoyo regular durante el día para cuidar de su persona).

_____ Ayuda intermitente (solo algunas veces necesita apoyo para cuidar de sí misma).

3. Tiene un plan de comportamiento en la más reciente IEP de su hija?

- _____ Sí
 _____ No
 _____ No estoy seguro(a)

4. Tiene un plan de salud en la más reciente IEP de su hija?

- _____ Sí
 _____ No
 _____ No estoy seguro(a)

5. Cual es la mejor manera en cómo se comunica su hija? (Por favor marque todas las que apliquen o escriba en el espacio en blanco si hay una extra que no se menciona)

- | | |
|-------------------------------------|--|
| _____ Verbalmente | _____ Vocalizando (haciendo sonidos) |
| _____ Expresiones de la cara | _____ Gestos |
| _____ Movimientos de cabeza | _____ Lenguaje corporal |
| _____ Pizarrón óptico | _____ Escribiendo en un cuaderno |
| _____ Comunicandose con un pizarron | _____ Lenguaje de signos |
| _____ Objetos | _____ Con fotografías |
| _____ Escritura | _____ Dispositivo con habla |
| _____ Dispositivo singular | _____ Lenguaje de signos computarizados o códigos de barra |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

6. Su hija recibe cualquiera de estos acomodamientos o modificaciones en la escuela? (Marque todos los que aplican por favor)

	Sí	No	No estoy seguro(a)	Quiero que lo tenga, pero de momento no lo tiene.
Adulto extra o asistente profesional (adicionalmente al maestro)				
Periodo extendido de tiempo para las asignaturas				
Apoyo de un dispositivo tecnológico (por ejemplo, un dispositivo para comunicarse o un iPad)				
Fotografías o asistencia visual				
Ajuste a las demandas de lectura				
Asistencia de la vista o el oído				
Apoyo de sus compañeros				
Asignaturas reducidas				
Tiempo extendido para los exámenes				

Uso de calculadora				
Ayuda de un lector en los exámenes				
Un asiento de su preferencia				
Alguien que le ayude a escribir o tomar notas				
Libros audiovisuales				

Otros: _____

7. Qué es lo que su hija cursa en este momento?

- _____ Diploma general (escuela preparatoria)
 _____ Colegio/Universidad
 _____ Diario vivir
 _____ Bachillerato
 _____ Otro (especifique)
 _____ No estoy seguro(a)

8. Entorno educativo típico para su hija este año:

- _____ Educacion general
 _____ Salon con recursos apropiados
 _____ Servicios basados en la comunidad
 _____ Salon de educación especial (solamente alumnos de necesidades especiales)
 _____ Otro (especifique)
 _____ No estoy seguro(a)

9. Está tomando clases de educación general este año su hija?

- _____ Sí
 _____ No
 _____ No estoy seguro(a)

Si lo está haciendo, cuáles son? _____

Hay clases que le gustaría a usted que su hija estuviera tomando? O bien clases que usted cree que a ella le gustaría tomar y no tiene acceso a ellas en este momento?

10.Cuál es la fecha que esperan que su hija se gradue o termine su escuela? (Mes/Año): _____

Appendix F: Confidentiality Agreement and Consent Form ~ Research Partner

Introduction

The following information is provided for you to decide whether you wish to participate as a research partner to _____. You may refuse to sign this form and not participate as a research partner. You should be aware that even if you agree to participate as research partner, you are free to stop being a partner at any time.

Purpose

Hello, my name is Amanda Miller and I am interested in finding out what works and what does not work for _____ in school so that I can help make education stronger for her and other girls.

Key Information

_____ or Amanda Miller have requested that you join them as _____ participates in this research project. By signing this form, you agree that you will keep all information discussed or explored during the research activities confidential. This means that you will not share what happens outside of the experience with people other than _____ and Amanda Miller.

You have been invited to (check all that apply):

Be a mobility partner during a photography session around the school.

Be a communication partner in an interview.

Be a communication partner in a group discussion.

Procedures

This study takes places during the 2018-2019 school year.

- If you have been chosen to be a mobility partner, then you will:

Move around the school with _____ while she takes pictures of the spaces in the school where she feels she learns best and of learning tools that work for her. Photographs will be of places and materials, not of people.

- If you have been chosen to be a communication partner, then you may:

Be audio/video recorded during interviews as she shares about her schooling experiences up til now as well as about her photography. You can choose to stop participating at any time.

Be audio/video recorded during a group discussion with other girls about their photography and school experiences. You can choose to stop participating at any time.

Video recordings will only be used if _____ is a visual communicator.

Risks

No risks are associated with your participation as a research partner in this study.

Benefits

Participation as a research partner to _____ will help researchers understand more about the experiences _____ is having at school. This will also help researchers understand how to support teachers to improve their teaching practices.

Payment to Research Partner

Research partners will not be paid for their participation as a research partner.

Participant Confidentiality

Your name will not be associated in any publication or presentation with the information collected by or shared by _____ or with the research findings from this study. Instead, I will use a pseudonym rather than your name. Any identifiable information will not be shared unless (a) it is required by law or university policy, or (b) you give written permission.

Permission granted on this date to use and disclose your information remains in effect indefinitely. By signing this form, you agree to participate as a research partner.

Refusal to sign consent and authorization

You are not required to sign this Consent and Authorization form, and you may refuse to do so without affecting your relationship with the research team. If you refuse to sign, then you cannot participate as a research partner in this study.

Cancelling this consent and authorization

You may withdraw your consent to participate as a research partner in this study at any time. If you are under 18 years old, your parent can withdraw their consent for you to participate as a research partner at any time. You also have the right to cancel your permission to use and disclose further information collected about you, in writing, at any time, by contacting either Amanda Miller via email at alm.amandamiller@ku.edu, by phone at (704) 985-6035, or by sending your written request to: Amanda Miller, University of Kansas, Department of Special Education, 1122 W. Campus Road, JRP 521, Lawrence, KS 66045. If you cancel permission to use your information, I will stop collecting additional information. Within one week of expressing your desire to withdraw, all your identifying information and data will be deleted from the secure database by the primary investigator listed below.

Questions

Questions about procedures should be directed to the researcher(s) listed at the end of this consent form.

Participant Certification

I have read this Consent and Authorization form. I have had the opportunity to ask, and I have received answers to, any questions I had regarding the study. I understand that if I have any additional questions about my rights or my child's rights as a research partner, I may call (785) 864-7429 or (785) 864-7385, write the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7568, or email irb@ku.edu.

Contact Information: You may ask any questions you have now. If you have questions later, you may contact me, Amanda Miller, at:

Phone: (704) 985-6035

Email: alm.amandamiller@ku.edu

Agree to Participate if You:

- understand what you will be doing in this project,
- have had all your questions answered, and
- agree to take part in this research by being a research partner with _____.

Do you want to participate as a research partner in this project?

Your Signature

Printed Name

Date

If you are under 18 years old or are not your own legal guardian:

Name of Youth Research Partner Participant

Parent/Legal Guardian's Name *Printed*

Parent/Legal Guardian *Signature*

Date

You may also contact one of my faculty supervisors at the University of Kansas:

Jennifer Kurth Faculty Supervisor Department of Special Education 1122 W. Campus Rd., 521 JRP University of Kansas Lawrence, KS 66045 jkurth@ku.edu (785) 864-4954	Subini Annamma Faculty Supervisor Department of Special Education 1122 W. Campus Rd., 521 JRP University of Kansas Lawrence, KS 66045 subiniannamma@ku.edu (785) 864-1710
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Appendix G: Consent Form ~ Educators

KEY INFORMATION

- The purpose of this study is to learn about the experiences of girls in middle and high school who receive special education services and supports as well as the experiences of their teachers.
- Your participation in this research project is completely voluntary.
- Your participation will take 4-6 hours.
- You will be asked to do the following procedures:
 - Complete a demographics questionnaire.
 - Participate in 2 interviews (approximately 1 hour each).
 - Allow 3-6 observations of your teaching to be observed and audio/video recorded (approximately 30-45 minutes each).
 - Permit 2-5 photographs to be taken of learning tools in your classroom.
- More detailed information on the procedures can be found below.
- No risks or discomforts are associated with your participation in this study.
- Your participation in this study will help researchers understand how to support educators as they teach girls who receive special education services and supports at school. You will also have the opportunity to discuss findings from transcripts with the primary investigator. This may benefit your own practice.
- Your alternative to participating in this research study is not to participate.
- Your identifiable information will not be used or distributed for future research studies even if your identifiable information is removed.

INTRODUCTION

The Department of Special Education at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You may refuse to sign this form and not participate in this study without prejudice. Even if you agree to participate, you are free to withdraw at any time and it will not affect your relationship with the University of Kansas.

PURPOSE OF THE STUDY

The purpose of this study is to learn about the experiences girls and their teachers are having in middle school and high school. Specifically, I am looking to understand more about how classroom communication, learning tools, and school spaces facilitate learning for girls who receive special education services and supports.

PROCEDURES

This study takes place during the 2018-2019 school year. In this project, you will be asked to complete a demographics questionnaire, participate in 2 interviews, allow 3-6 observations of your teaching to be observed and audio/video recorded, and allow 2-5 photographs to be taken of learning tools in your classroom. The observations would last the duration of the class period. Video recordings will only be used if the focal student in your classroom is a visual communicator. Video recordings will not include any other students in your classroom who have not consented to the study. The interviews will last approximately 1 hour each and will be audio-

recorded. Interviews will occur at a time and place that is convenient for you. You have the option of not being audio recorded during the interviews, and instead I can take notes. You can choose to have the recordings stopped at any time.

Transcripts taken from audio/video recordings of classroom observations and audio recordings of interviews will be coded to remove individual names and identifying information. The recordings will be transcribed into writing by the primary investigator. The photographs will be scanned as digital files. These audio recordings and digital files will be used only by the researcher(s) and will be stored in a password-protected computer file for a maximum of 10 years. The results of this study will be used for scholarly reports, published journal articles and conference presentations. In any publication or public presentation, pseudonyms will be used for any identifying information so that you will never be identified by name.

RISKS OR DISCOMFORTS

No risks or discomforts are associated with your participation in this study.

BENEFITS

Participation in this study will help researchers understand how to support educators as they teach girls who receive special education services and supports at school. You will also have the opportunity to discuss findings from transcripts with the primary investigator in order to improve your own practice.

PAYMENT TO PARTICIPANTS

You will receive a \$25 gift card for participating in the study. If you choose to withdraw at any time, you will still receive the gift card.

PARTICIPANT CONFIDENTIALITY

Your name will not be associated in any publication or presentation with the information collected about you or with the research findings from this study. Instead, the researcher(s) will use a pseudonym rather than your name. Your identifiable information will not be shared unless (a) it is required by law or university policy, or (b) you give written permission. A code will be assigned to the audio/video recording of the classroom observations to ensure that you will not be associated with the audio/video recordings. During presentations and publications, only transcripts of your words and actions will be used; your voice will not be a part of any presentation or publication. The photographs of learning tools will also not be part of any presentation or publication. Rather, they will only be used as conversation starters during interviews with you or participating, anonymous students. Permission granted on this date to use and disclose your information remains in effect indefinitely. By signing this form, you give permission for the use and disclosure of your information for purposes of this study at any time in the future.

REFUSAL TO SIGN CONSENT AND AUTHORIZATION

You are not required to sign this Consent and Authorization form and you may refuse to do so without affecting your right to any services you are receiving or may receive from the University of Kansas or to participate in any programs or events of the University of Kansas. However, if you refuse to sign, you cannot participate in this study.

CANCELLING THIS CONSENT AND AUTHORIZATION

You may withdraw your consent to participate in this study at any time. You also have the right to cancel your permission to use and disclose further information collected about you, in writing, at any time, by contacting either Amanda Miller via email at alm.amandamiller@ku.edu, by phone at (704) 985-6035, or by sending your written request to: Amanda Miller, University of Kansas, Department of Special Education, 1122 W. Campus Road, JRP 521, Lawrence, KS 66045. If you cancel permission to use your information, I will stop collecting additional information. Within one week of expressing your desire to withdraw, your identifying information and data will be deleted from the secure database by the primary investigator listed below.

QUESTIONS ABOUT PARTICIPATION

Questions about procedures should be directed to the researcher(s) listed at the end of this consent form.

PARTICIPANT CERTIFICATION

I have read this Consent and Authorization form. I have had the opportunity to ask, and I have received answers to, any questions I had regarding the study. I understand that if I have any additional questions about my rights as a research participant, I may call (785) 864-7429 or (785) 864-7385, write the Kansas Human Research Protection Program (HRPP), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7568, or email irb@ku.edu.

I agree to take part in this study as a research participant. By my signature I affirm that I am at least 18 years old and that I have received a copy of this Consent and Authorization form.

Type/Print Participant's Name

Date

Participant's Signature

Researcher Contact Information:

Amanda Miller Primary Investigator Department of Special Education 1122 W. Campus Road, JRP 521 Lawrence, KS 66045 alm.amandamiller@ku.edu (704) 985-6035	
Jennifer Kurth Faculty Supervisor Department of Special Education 1122 W. Campus Rd., JRP 521 University of Kansas Lawrence, KS 66045 jkurth@ku.edu (785) 864-4954	Subini Annamma Faculty Supervisor Department of Special Education 1122 W. Campus Rd., JRP 521 University of Kansas Lawrence, KS 66045 subiniannamma@ku.edu (785) 864-1710

Appendix H: Educator Demographic Information

Your name: _____

1. Your race/ethnicity (select all that apply):

<input type="checkbox"/> Black, African American	<input type="checkbox"/> Native American
<input type="checkbox"/> Latina/o/x, Hispanic, Mexican	<input type="checkbox"/> Asian, Asian American
<input type="checkbox"/> White, Caucasian	<input type="checkbox"/> Pacific Islander
<input type="checkbox"/> Alaska Native	<input type="checkbox"/> If not listed, please specify: _____ _____

2. Disability self-disclosure: _____

3. Current professional position/title in your school: _____

4. Content areas and grades you currently teach:

5. Highest level of educational attainment:

<input type="checkbox"/> High school diploma	<input type="checkbox"/> Specialist degree
<input type="checkbox"/> Bachelor's degree	<input type="checkbox"/> Doctorate
<input type="checkbox"/> Master's degree	<input type="checkbox"/> Other (Please specify): _____ _____

6. Teaching licenses you currently hold:

7. Other school certification/endorsement (e.g., ELL endorsement):

8. Number of years teaching: _____

Appendix I: Classroom Observation Guide¹¹

To be completed before class begins:

Pseudonym:

Teacher:

Subject:

Grade Level:

Date:

Time

start recording:

Length of observation:

Classroom demographics

Record the number of students in each category. These are based on observer's interpretations of how the students' present and can be confirmed by teacher and student discussion. Students will not be asked to identify.

Total number of students in class:

Race/ethnicity of students in class:

White

Latinx

Black

Asian

Multiracial

Gender of students in class:

Male

Female

Gender non-conforming

Physical characteristics of the room

Draw a diagram of the classroom layout. Indicate where the focal student sits and who she sits by:

¹¹ This protocol was adapted based on iterative data collection and analysis as well as from participants' input (Bhattacharya, 2017; Seidman, 2013). The original protocol was 11 pages in length with space for 60 minutes of observation. Created by Amanda L. Miller – adapted with permission from Dr. Subini Ancy Annamma; Additional credit to the folks at Collaborative Strategic Reading Observation Protocol: https://docs.google.com/spreadsheet/viewform?hl=en_US&formkey=dEpIbylrS2FRVmxmU1RJdUd0Q1k3Vnc6MA#gid=0

List the learning tools on the walls (e.g., student work, posters, diagrams):

Background

Note if there is anything unusual about this particular day (e.g., quiz, modified schedule)

Other adults/students in the classroom:

Additional comments/information provided by teacher or students:

Draw a diagram or a map of the school's geography. Indicate where the classroom is located in relation to other spaces in the school:

To be completed during the observation

Obs. mins.	Teacher talk, texts, and actions	Student and peer talk, texts, and actions	Researcher comments
0:00- 1:59			
2:00- 3:59			
4:00- 5:59			
6:00- 7:59			
8:00- 9:59			
10:00- 11:59			

To be completed after the observation

Topic of class:

Describe or list the teaching tools used.

Learning tools.

Texts used.

Types of groupings used: Individual Dyads Cooperative (3-4) Whole class

(Draw another diagram or explain in reference to the classroom layout map)

Describe the varying levels of student engagement. Use behaviors as evidence (e.g., student is working on group project with other students as seen using communication board to answer yes/no questions as the group makes decisions about their class presentation, student is not working on class activity as seen with head down on desk sleeping):

Appendix J: Photography Project Information Sheet¹²

Girls of Color Reinventing Education Through an Intersectional Photographic Lens

The purpose of this study is to understand how girls of color understand their educational lives. A small group of girls of color from your school have agreed to participate in this study. They will take photographs in response to prompts provided to them by the principal investigator. This methodology is called photovoice¹³. The three major aims of photovoice are: (1) to allow participants to document their lives on their own terms; (2) to raise critical consciousness among participants; and (3) to initiate positive change through reaching policy makers through the photographs and research project as a whole.

This research project is being undertaken by Amanda Miller, the study's principal investigator. [student name] is a participant in this research project.

Each participant will take photographs in response to photography prompts. The principal investigator will engage participants in interviews regarding the photographs. Photographs will focus on spaces and learning tools and will not include people's faces. If a person's face is accidentally photographed, then we will use blurring or masking to maintain the person's anonymity¹⁴.

Findings of this study may be presented in scholarly journal articles, conference presentations, and books. One goal of the photovoice methodology is to reach policy makers. As such, a public exhibition of the research and the photographs may be planned at the conclusion of the study.

If you have any questions about this project, you may contact the principal investigator, Amanda Miller, via phone or email at:

Phone: (704) 985-6035

Email: alm.amandamiller@ku.edu

You may also contact the University of Kansas Human Research Protection Program (HRPP) at:

Phone: (785) 864-7429 or (785) 864-7385

Mail: University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7568

Email irb@ku.edu

Thank you for your interest in this project!

¹² Adapted with permission from Dr. Amanda O. Latz.

¹³ Development of the photovoice methodology is credited to Caroline C. Wang and Mary Ann Burris.

¹⁴ Strack and colleagues (2004) discuss how to mask faces and Mamary and McCright (2007) discuss how to blur faces in photographs to maintain anonymity.

Appendix K: Sample Photography Prompts

School spaces and classroom layouts

- Where do you enjoy learning?
- Where do you feel your ideas are most valued?
- Describe where you learn best.

Learning tools

- What materials or tools help you learn best?
- What materials or learning tools do you enjoy using?
- Describe how you learn best.

Appendix L: Student Interview #1 Guide¹⁵

I will begin by discussing why I am here (to learn about girls' experiences in school). In particular, we are going to be talking about her experiences with school from as far back as she can remember up until now. Let the student know that she can skip questions that make her feel uncomfortable, request more time to think, request to take a break, and she can leave and return to class if she decides she does not want to participate anymore. Also let her know that we do not have to finish the interview today. But instead, can schedule to finish another time if needed. The following questions will guide the interview (if the participant is in middle school, then I will skip question set #5):

- 1) How was your elementary school experience? What did you like? What did you not like? Why? What do you wish had been different?
 - a. Teachers
 - b. Subjects
 - c. Friends
 - d. Classrooms and learning tools
 - e. Conversations in the classroom
 - f. Field trips
 - g. Extracurricular activities
- 2) What was your middle school experience like? What did you like? What did you not like? Why? What do you wish had been different?
 - a. Teachers
 - b. Subjects
 - c. Friends
 - d. Classrooms and learning tools
 - e. Conversations in the classroom
 - f. Field trips
 - g. Extracurricular activities
- 3) Tell me about your experiences right now. What classes are you taking? What do you like about them? What is not working well for you?
 - a. Teachers
 - b. Subjects
 - c. Friends
 - d. Classrooms and learning tools
 - e. Conversations in the classroom
 - f. Field trips
 - g. Extracurricular activities
- 4) What are you looking forward to this year?
- 5) What are your dreams? Fears?
- 6) Talk about goals for this year, futures planning, and beyond.
- 7) Anything else she wants to share?

¹⁵ This protocol was adapted based on iterative data collection and analysis as well as from participants' input (Bhattacharya, 2017; Seidman, 2013).

Appendix M: Student Interview #2 Guide¹⁶

I will begin by discussing why I am here (to learn about girls' experiences in school). In particular, we are going to be talking about school spaces and learning tools today. Remind the student that she can skip questions that make her feel uncomfortable, request more time to think, request to take a break, and she can leave and return to class if she decides she does not want to participate anymore. Also let her know that we do not have to finish the interview today. But instead, can schedule to finish another time if needed.

- 8) Tell the participant that we are going to be talking about (up to) 10 of her photos today.
- 9) Give her time to look through and decide on the photos she wants to talk about.
- 10) If it is helpful, flag the photos she wants to discuss with small, temporary post-it notes or digital notes.
- 11) The following questions¹⁷ will guide this portion of the interview:
 - a. What did you take a picture of? Why? What does it mean to you?
 - b. What did you see and learn when taking this picture(s)?
 - c. What do the pictures prompt you to think about at school?
 - d. How do the pictures or meanings relate to your everyday school experiences? What about your life outside of school?
- 12) Participants will discuss their photographs for about 45-60 minutes. Then we will work on a mapping activity.
 - 1) Tell the student explicitly: Now I would like you to create a map of a class you enjoy spending time in or a map of how you see the whole school. You can choose.
 - 2) Give this prompt¹⁸: *Map a school space of your choice. It can be as small as a classroom or as big as the whole school. Include people, materials, difficulties, and opportunities within that space. You can use different colors to show different feelings. You can use symbols, like lines and arrows. You can create a flowchart. You can use words. Be as creative as you'd like. Afterwards, you will get a chance to explain it to me.*
 - 3) I will also draw a map while she draws her map. I will provide the learning tools (e.g., paper, pencil, color pencil, markers) to create the map.
 - 4) The student will have about 20 minutes to draw her map and then we will talk about her map.
 - 5) The following questions will guide this portion of the interview:
 - a. Tell me about your map.
 - b. Why did you choose to draw this space?
 - c. What/who makes it easier for you to learn here?
 - d. What/who makes it hard for you to learn here?
 - e. What do you wish was different in this classroom, in the school?

¹⁶ This protocol was adapted based on iterative data collection and analysis as well as from participants' input (Bhattacharya, 2017; Seidman, 2013).

¹⁷ Questions adapted from previous scholarship (Burke et al., 2016; Wang & Burris, 1997).

¹⁸ Prompt adapted from previous scholarship (Annamma, 2013; Annamma, 2018a).

Appendix N: Student Focus Group Guide¹⁹

I will begin by reminding everyone why I am here (to learn about girls' experiences in school). In particular, we are going to be talking about school spaces and learning tools as a group. Everyone is going to get a chance to view, share, and discuss their photographs and that's why I like to call it a Photographer's Symposium. Remind the students that they can skip questions that make them feel uncomfortable, request more time to think, and request to take a break. In addition, if someone needs to leave and return to class, then she can at any time. Also remind the participants that we do not have to finish the focus group today. But instead, can schedule to finish another time if needed. Finally, I will discuss how conversations that occur in the focus group are confidential and will remind the students that they are not to share the content of the group or who attended.

- 1) First, everyone will have a chance to look their photo albums as well as one another's to (re)familiarize themselves with all the data they have collected.
- 2) Then, each participant will choose (up to) 5 photographs to share.
- 3) Third, we will do a quiet gallery walk²⁰ of everyone's photographs.
- 4) Next, I will begin by showing one photo I took of a learning tool and one photo of a school space, inviting the students to ask me questions and talk about what they see.
- 5) Then, I will ask if any of the students would like to share about their photograph(s). I will also refer back to this set of questions as the girls collectively analyze their photographs (SHOWeD; Wang, 2006):
 - a. What do you See here?
 - b. What is really Happening here?
 - i. What do you think is happening in this photo?
 - ii. Do you think other students like being in the [name of place shown in photograph]? Why?
 - iii. Do you think other students like to use [learning tool in the classroom]? Why? Have you seen other students using it? Were they smiling and laughing? Were they mad when they had to use it?
 - iv. What do you want people to know about this [insert name of school space, classroom layout, learning tool shown in the photograph]?
 - c. How does this relate to yOur lives?
 - i. What about this learning tool makes learning easier? Harder?
 - ii. What kinds of things happen in the classroom that make learning easier? Harder?

¹⁹ This protocol was adapted based on iterative data collection and analysis as well as from participants' input (Bhattacharya, 2017; Seidman, 2013).

²⁰ Activities and questions adapted from previous scholarship (Annamma, 2013, 2018a; Sirin & Fine, 2008; Wang, 2006; Wang & Burris, 1997).

- iii. What does your teacher do in this classroom that is helpful for you? Not helpful?
 - d. Why does this problem or asset exist?
 - i. Was it like this at your other school?
 - ii. Do you think this is helpful for your learning? Harmful? Tell me more.
 - e. What can we Do about it?
 - i. What do you wish you could change about [school space, classroom layout, learning tool shown in the photograph]?
 - ii. What do you wish adults could change about [school space, classroom layout, learning tool shown in the photograph]?
 - iii. What do you wish there was more of? Less of?
- 6) Afterwards, ask students about learning tools and school spaces that were not represented in their photos through the use of researcher-generated photographs.
 - a. What do the pictures prompt you to think about at school? Learning?
 - b. How do the pictures relate or not to your everyday school experiences?
 - c. Are you interested in learning more about these tools? Being in these spaces?
- 7) Discuss next step with the students. Would they like to show their photos to their families, friends, teachers, school administrators?

Appendix O: Teacher Interview #1 Guide²¹

I will begin by discussing why I am here - to learn about the girls' and their teachers' experiences in school. In particular, we are going to be talking about how teachers use discourse and space to foster access and progress for girls of color who receive special education supports and services. Inform the participant that they can skip questions that make them feel uncomfortable, request more time to think, and they can end the interview if they decide that they do not want to participate any longer.

Display notecard. The teacher can refer back to this throughout the interview:

- a. discourse = talk, texts (anything with print), and actions
- b. space = larger school geography, classroom layouts (how a class is organized), and learning materials (pencil, paper, white board, iPad)

The following questions will guide the interview:

1. First, tell me about how you see your day.
2. I drew this map of the way your classroom layout is structured (give map-specific details), tell me more about how you chose to design the classroom this way and why.
3. I took these photographs of learning tools (ones that the focal student was using or was not using) during my first observations in your classroom. Tell me more about how these learning tools are used in your classroom. Who uses them? When? Why? Do you have future plans for these tools? Ask about any learning tools that are not represented in the photographs.
4. I took these photographs of teaching tools (specific to the classroom that the teacher was using or was not using) during my first observations in your classroom. Tell me more about how these teaching tools are used in your classroom. Who uses them? When? Why? Do you have future plans for these tools? Ask about any teaching tools that are not represented in the photographs.
5. Discuss talk, texts, and actions in the classroom broadly. How is learning facilitated in your classroom? What are you proud of? What would you your plans for the future?
6. Invite the teacher to set a goal(s) focused on how they will use discourse and/or space to enact inclusive schooling practices and/or disrupt exclusionary schooling practices for girls of color who receive special education supports and services.

²¹ This protocol was adapted based on iterative data collection and analysis as well as from participants' input (Bhattacharya, 2017; Seidman, 2013).

Appendix P: Teacher Interview #2 Guide²²

I will begin by reviewing why I am here - to learn about the girls' and their teachers' experiences in school. We are going to be building off of our conversation from last time. Specifically, we are going to be talking about how you use discourse and space to foster access and progress for girls of color who receive special education supports and services. Remind the participant that they can skip questions that make them feel uncomfortable, request more time to think, and they can end the interview if they decide that they do not want to participate any longer.

Display notecard. The teacher can refer back to this throughout the interview:

- c. discourse = talk, texts (anything with print), and actions
- d. space = larger school geography, classroom layouts (how a class is organized), and learning materials (pencil, paper, white board, iPad)

The following questions will guide the interview:

Classroom

1. Invite the participant to discuss and reflect on the goal(s) they discussed in the first interview.
2. Discuss any additional photographs of learning tools (ones the focal student was using or was not using). Tell me more about how these learning tools are used in your classroom. Who uses them? Why? Do you have future plans for these tools?
3. Here are segments of discourse from the lessons I recorded and observed when I was in your classroom (give participant time to read the transcript excerpt). What comes to mind when you read this? Considering the talk, texts, and actions, how was learning facilitated here? What are you proud of? What would you change for next time? (This question sequence will occur for 3-5 transcript excerpts, depending on how much time is left in the interview).

Broader school environment

1. I saw these learning tools (give context-specific examples) in another classroom(s). What comes to mind when you see these learning tools? Who uses these tools? Why? When?
2. I have this map of where your classroom is located in relation to the rest of the school. What comes to mind when you look at this map?
3. Invite the teacher participant to reflect on and discuss next steps for their goal(s).

²² This protocol was adapted based on iterative data collection and analysis as well as from participants' input (Bhattacharya, 2017; Seidman, 2013).

Appendix Q: Transcription Conventions

Transcription conventions

Code	Meaning
.	Final tone, a full stop in speech
,	A non-final tone, like a comma in speech
?	A rise in pitch, like a question in speech
!	A rise in pitch, like an exclamation in speech
(6)	Timed pause over 2 seconds rounded to nearest second
wor-	Truncated, cut-off word/interrupted speech
[]	Student action
[]	Teacher action
::	Lengthening of syllable
(HH)	Laughter
((inaudible))	Stretch of talk difficult to transcribe
((°))	Talk or sound that is markedly quiet or soft

Note. Transcription conventions adapted for use (Beneke & Cheatham, 2017; Bolden & Hepburn, 2018; J. W. Du Bois, 2006; Markee, 2015).